

## GREEN ORGANISATIONAL REORIENTATIONS FOR THE NEW GLOBALISATION

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**Abstract:** Achieving green and sustainable development is a fundamental characteristic of the emerging new globalisation, evident at the organisational and broader socioeconomic levels. This conceptual research explores how the recent literature approaches the dimensions and methodologies of green organisations, introducing a mechanism for advising and reinforcing their green physiology in Stra.Tech.Man terms (strategy-technology-management synthesis). The Green Stra.Tech.Man Scorecard is an action research diagnostic tool for all organisational sizes, regardless of industry, ownership type, or location, integrating fundamental green organisational dimensions.

Keywords: Green development, new globalisation, Stra.Tech.Man approach.

### Introduction

Achieving greener growth and sustainable development has become a fundamental goal globally, being shared by various stakeholders including governments, corporations, non-profit organisations, and individuals in the emerging new globalisation (Laudicina & Peterson, 2016; Killian, 2021; Vlado & Chatzinikolaou, 2021). In addition to political science, which focuses on the evolution and repositioning of environmental management (Fiorino, 2018), three primary theoretical traditions delve into this phenomenon.

First, the broad ecological and environmental economics field offers distinct perspectives on the relationship between economy and environment. Second, eco-efficiency as a theory and practice of business administration is a significant conceptual source of green growth, particularly at the micro level. Lastly, a broader socioeconomic development viewpoint underscores that environmental sustainability spans many disciplines, necessitating an interdisciplinary approach (Fiorino, 2018).

Furthermore, other critical theories supporting the adoption of a green economy and managerial reorientation—more or

less directly—including Freeman's (1984) stakeholder theory, the resource-based view (RBV) theory (Barney, 1991; 2001), and the institutional theory (DiMaggio & Powell, 2000). According to Freeman (1984), the success of an organisation depends on its collaboration with multiple stakeholders at diverse functional levels. Empirical research, such as that conducted by Fonseca *et al.* (2016), found a strong correlation between competitive position and stakeholder satisfaction, lending further credibility to Freeman's stakeholder theory. The RBV theory suggests that an organisation's resources are key to superior performance, competitive advantage, and strategic success, with the adoption of green economy priorities potentially developing rare, valuable, inimitable, and non-substitutable resources and capabilities. This could assist an organisation in stakeholder integration and response to their demands, ultimately leading to superior performance, as posited by the stakeholder theory. Finally, the institutional theory proposes adopting new models from successful organisational adaptability and sustainability, explaining why organisations converge and become similar due to societal

influence and the pursuit of organisational legitimacy (DiMaggio & Powell, 2000).

Further, greening the economy in economics means transitioning to a new era of technology (Rifkin, 2002; Perez, 2010; Schwab, 2016). A notable development in this debate is the “Porter Hypothesis”, which postulates that “*properly designed environmental standards can trigger innovation that may partially or more than fully offset the costs of complying with them*” (Porter & van der Linde, 1995, p. 98). This hypothesis challenges once again the conventional conception of the firm as a “black box” where decisions result from perfect information and rational maximisation—with the sole aim of obtaining financial profits in the short term—as inadequate (Nelson & Winter, 1982; Colander, 2017; Chatzinikolaou & Vlados, 2019). Strategists now understand that environmental pollution is not an externality but signals a less efficient use of internal resources (Dordmond *et al.*, 2021; Wang & Zhang, 2022).

Despite the criticisms from different sides of the public spectrum on whether it supports or constrains economic progress, the green economy provides a reconciling growth path within finite ecological limits (Fiorino, 2014). Focusing on the micro level and business development, we see an investigation opportunity—a research gap—to deepen this debate in light of today’s emerging world reality as the micro is a developmental core of all socioeconomic systems in integrative “macro-meso-micro” terms (Vlados & Chatzinikolaou, 2020). It seems imperative to examine the green micro level further, suggesting development directions for all socioeconomic organisations in the emerging new global reality. This study attempts to introduce a refocused perspective to the debate on improving business performance through eco-innovation by exploring the following research questions (RQ):

- RQ1: What are the main approaches and analytical orientations to green structures, systems, and organisations in recent literature?
- RQ2: How can we more comprehensively and effectively record, analyse, diagnose, and promote green growth in all organisations?

The remainder of this paper is structured as follows. Section 2 presents the methodological directions and the argument process for reinforcing green organisations in today’s global environment. Section 3 examines the current evolutionary phase of the new globalisation and defines the green economy, and Section 4 breaks down the basic principles of contemporary green organisational development. Section 5 introduces a modified “Stra.Tech.Man Scorecard,” a consulting instrument aiming at recording, analysing, diagnosing, and reinforcing the green evolution of all organisations based on the strategy-technology-management synthesis (Vlados 2021). Section 6 makes final remarks on the prospects for deepening the research.

## Methodology

This conceptual study utilises the integrative literature review approach. In particular, it explores crucial elements of green entrepreneurship in the current global transition by critically examining and synthesising theoretical perspectives that appear somewhat fragmented in the relevant literature (cf. Jaakkola, 2020, for types of conceptual approaches). It initially captures state-of-the-art trends in the green perspective of organisational dimensions such as strategy, technology, management, marketing, and innovation. Then, it modifies the Stra.Tech.Man Scorecard toward an advising framework capable of diagnosing the green physiology of all organisations (Vlados, 2021). The Stra.Tech.Man approach is the foundational method for studying the particular organisational physiology. It melds strategy, technology, and management, providing a comprehensive perspective on an organisation’s mode of survival and development, its competitive synthesis, and its evolutionary trajectory. As encapsulated in the Stra.Tech.Man Scorecard,

this approach evaluates 40 factors to gauge an organisation’s comprehensive competitive stance. It sheds light on the organisation’s strategic direction, technological proficiency, resource management, innovation potential, and financial performance (Vlados, 2021).

In this study, we conducted a broad literature review, adopting an interdisciplinary and critical lens. Our selection of sources was guided by their relevance to the integrative research questions and their capacity to strengthen our argument. This aligns with Snyder’s (2019) recommendations for integrative reviews. Accordingly, this approach to reviewing the literature encompasses several key premises upon which our research is based. The typical purpose of such reviews is to critique and synthesise existing literature. In generic terms, research questions can be either narrow or broad in scope, and in our case, we opted for a blend of both to ensure comprehensive coverage. Our sample characteristics predominantly focused on research articles, books, and other published texts that offer a wide perspective—in our selection process, we preferred recent studies found on Scopus, a leading platform for scholarly literature searches, as endorsed by Harzing and Alakangas (2016).

We primarily prioritised rigorously peer-reviewed works published in well-respected scientific outlets. However, in line with Snyder’s approach to integrative literature reviews, we also considered significant studies from other databases that, in our opinion, offered unique insights. We aimed to provide a comprehensive overview of green structures, systems, and organisations in the current literature. We also explored recently developed methodologies to promote green growth in organisations. Our analysis involved a critical examination of each source’s theoretical nuances in accordance with Snyder’s (2019) methodological guidelines. A key result of our study was developing a theoretical model that encapsulated the synthesis we aimed for, aligning with Snyder’s (2019) recommendations.

Figure 1 illustrates the overall argumentation process, which applies the classic relevant theoretical framework introduced by Toulmin (1958). This argumentation serves the need for a unifying approach as the literature appears to study the various green organisational dimensions without considering the emerging new globalisation (cf. Yadav, 2010, on the contribution of conceptual studies to science fundamentals). The claim is multi-layered,

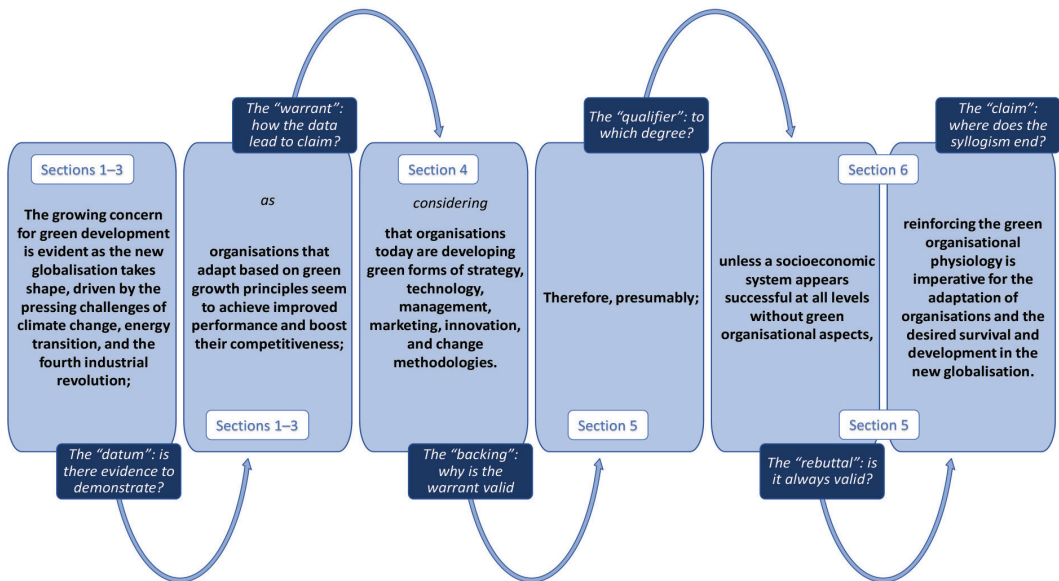


Figure 1: The supported argument, based on Toulmin (1958)

following Toulmin’s (1958) influential contribution to scientific argumentation, broken down into at least six steps: Data, warrant, backing, qualifier, rebuttal, and claim (van Eemeren *et al.*, 2014; Jaakkola, 2020).

The article’s different sections function as parts of this structured argument. In particular, Sections 1-3 discern the further diffusion of concern about the need to expand green development in the new globalisation as organisations that act adaptively based on the principles of green growth appear to achieve increasingly better performance and enhance their competitiveness. This warrant is valid, considering organisations today are developing green strategies, technology, management, marketing, innovation, and change methodologies (Section 4). Therefore, presumably (according to postulations made in Section 5), reinforcing the green organisational physiology is imperative for developing organisations and the desired survival and development in the new globalisation. Finally, the rebuttal of this argument would mean that a socioeconomic system appears successful at all levels without green organisational aspects. The concluding Section 6 examines this research limitation in depth.

**Background: New Globalisation, Green Economy, and Green Organisational Physiology**

Everything shows that our world is being led rapidly into the new globalisation that profoundly transforms contemporary reality. The financial crisis of 2008, the COVID-19 pandemic of 2019-2020 (hastening of the fourth industrial revolution), and Russia’s invasion of Ukraine in 2022 (energy transition acceleration) have contributed significantly toward the rise of this new world. According to Vlados *et al.* (2022), the new globalisation emerges after the structural maturation of the previous evolutionary phase, progressively leading to readjustments of the international regime, the underlying development-crisis platform, and entrepreneurial innovation. Table 1 presents the four evolutionary stages discerned in the relevant literature.

The new globalisation emerges nowadays after successive historical transitions. In particular, the different traits in these evolutionary phases are as follows:

- (1) 1945-1973 period: The international capitalist system grew and developed rapidly due to the US hegemonic power, the Fordist

Table 1: Characteristics of the new globalisation stage of global capitalism, as adapted from Vlados *et al.* (2022)

	<b>International Regime</b>	<b>Development-Crisis Platform</b>	<b>Innovation Generations</b>
1945-1973: Age of post-World War II expansion and domestic growth	Predominance of the United States and bipolar world order	Development based on Fordism	Aggregate innovation
1973-1980: Period of turbulence and onset of globalisation	Destabilisation of the bipolar system	Crisis within the Fordist system	Innovation emerging from combinations
1980-2008: Era of globalisation	Progressive transition to a post-Cold War world	Evolving post-Fordist models under globalisation	Emphasis on holistic innovation
2008-present: The phase of renewed or reformed (new) globalisation	Striving for a new geopolitical balance favouring sustainable development	Green post-Fordist development	Push for organic, open and ecosystem-based innovation for green development

growth that favoured mass consumption and production in Center economies, and the aggregative innovation process mainly in mass firms of the developed world (Aglietta, 1979; Krasner, 1983; Keohane, 1984; Boyer, 1990; Rothwell, 1994).

- (2) 1973-1980 period: The international system destabilised and ceased to be the sum of bipolar geopolitical forces and nationally oriented firms. Also, business profitability declined in most industries, and mass production-consumption at the centre entered a profound realignment. Alongside these developments, mass firms designed and implemented enhanced marketing strategies, emphasising customer specificity and refocusing their innovation effort by combining existing resources in alternative ways (Rothwell, 1994; Boyer & Saillard, 1995; Ikenberry, 2001).
- (3) 1980-2008 period: The globalisation phase marked the worldwide growth of foreign direct investment and the emergence of new economic superpowers that acquired an increasingly significant position in global developments. Also, the different globalised post-Fordisms of the Periphery and Center contributed to relatively balanced and stable development as post-Fordist firms progressively incorporated flexible strategies for their competitive empowerment. In tandem, innovation during this period was an integration issue, primarily regarding networking among partners and internally interoperable systems (Rothwell, 1994; Ikenberry, 2001; Michalet, 2005; Boyer, 2015).
- (4) 2008-Present: The aftermath of the 2008 financial crisis triggered considerable shifts in the global economy—structural transformations that had been simmering even before this watershed moment. In an optimistic scenario, the emerging phase of globalisation is projected to foster amplified geopolitical stability and multipolarity. Western geostrategic cooperation is set to further the green growth agenda, propelling

hybrid post-Fordist approaches that support eco-friendly consumption and production. This trajectory will encourage organic innovations as firms self-renew their competitive advantages to achieve green development goals (Andrikopoulos & Nastopoulos, 2015; Laudicina & Peterson, 2016; Vlado & Chatziniolaou, 2021; Killian, 2021). Nonetheless, potential alternative outcomes point towards geopolitical turbulence and economic stagnation. A mounting strain between less and more developed or industrialised nations is foreseen (Kieh, 2008), with the BRICS countries steering towards fresh geopolitical alliances in energy, trade, and security landscapes (Dasgupta & Pieterse, 2009). Other possibilities include a sustained deceleration in global GDP growth, further decentralisation of supply chains, and sudden regulation shifts (Bhattacharya *et al.*, 2017). Given the recent trends, a new world order characterised by modest improvements in geopolitical stability and economic development is likely to surface after the current phase (Laudicina & Peterson, 2016).

The United Nations' flagship Sustainable Development Goals (SDGs) are relevant and pivotal to the ongoing discourse on the global transition towards a green economy (OECD, 2018). As an embodiment of global stakeholder needs, these goals aim to balance economic, social, and environmental development. Of the 17 SDGs, several key goals reflect green economy issues that necessitate immediate political and social intervention. These include but are not limited to, SDG7 (Affordable and Clean Energy) and SDG12 (Responsible Consumption and Production).

The SDGs also provide a comprehensive framework for monitoring progress towards sustainable development. For instance, SDG7 (Affordable and Clean Energy) is intrinsically linked with other SDGs, such as SDG1 (No Poverty), SDG2 (Zero Hunger), SDG3 (Good Health and Well-being), SDG8 (Decent

Work and Economic Growth), and SDG13 (Climate Action). The interconnected nature of sustainability concerns is highlighted through these connections, emphasising the necessity for an approach that is holistic, interdisciplinary, and theoretically more integrated (Sachs *et al.*, 2021; Renaud *et al.*, 2022).

Additionally, SDG12 (Responsible Consumption and Production) has a particularly strong association with global trade-offs. It emphasises the urgent need to enhance energy efficiency, augment the share of clean and renewable energies, and improve sustainable consumption patterns worldwide (Fonseca *et al.*, 2020). Thus, as the world is in the midst of a significant paradigm shift, the SDGs serve as a macro-policy guidepost for the emerging global era (Clapp & Dauvergne, 2005; Steffen *et al.*, 2015; Albu, 2017; Hoerber *et al.*, 2021). Table 2

presents relevant recent definitions of the green economy from reports of well-known policy forums that discuss the current global transition.

These seminal reports predominantly approach green growth from macro-environmental and ecological viewpoints. Within the discourse on new globalisation, these reports tackle environmental stability and, to a certain degree, geopolitical stability, as well as economic growth and development, all of which are key facets of an envisaged high-performance scenario for the future. However, they overlook the third analytical pillar of micro-issues: the importance of fostering organic, ecosystemic, and open innovation for green development. This overlooked dimension will be vital for actualising a high-performance scenario within the emerging new globalisation.

Table 2: Contemporary green economy definitions

Source	Refined Interpretation	Concept Summary
United Nations Environment Program (2011, p. 9)	An arrangement that heightens individual well-being and promotes justice while considerably decreasing ecological perils and lack of resources.	A sustainable economy focuses on welfare, fairness, mitigation of environmental threats, and reduction of resource scarcity.
World Bank (2012, p. 2)	Expansion that efficiently employs natural assets, reduces contamination and environmental damage and contemplates natural dangers and environmental stewardship to deter physical catastrophes.	Efficient resource use, clean growth, and resilience against natural hazards.
World Business Council for Sustainable Development (2012)	A lifestyle that provides access to and affordability of education, healthcare, transportation, food, water, energy, housing, and consumer goods, all achieved in a manner that can be maintained with available natural resources without further damaging biodiversity, climate, and other ecosystems.	Maintaining living standards sustainably within the limits of the ecosystem.
OECD (2011, p. 9)	Encouraging economic prosperity and advancement while ensuring that natural wealth continues to offer the resources and environmental services that our well-being relies on.	Harmonising economic development with the conservation of the environment.
Green Economy Coalition (2012)	An economy that cultivates a superior quality of life for all within the ecological boundaries of the Earth.	Enhancing the quality of life within the Earth's ecological limits.
Institute for European Environmental Policy (ten Brink <i>et al.</i> , 2012, p. 34)	A resource-sparing, low-emission, equitable economy that remains within a "safe operating zone"—or functioning within the planet's recovery capacities and steering clear of crucial ecological limits.	Efficient use of resources, reducing carbon footprint, and operating within the regeneration capacity of the Earth.

United Nations (2015)	Paris Agreement (2015-2016): An international commitment within the United Nations Framework Convention on Climate Change (UNFCCC) aimed at mitigating greenhouse gas emissions, adapting to climate change effects, and mobilising finance to achieve these goals, all starting in the year 2020. The goal is to reduce global warming to below 2°C and pursue efforts to limit it to 1.5°C .	A global commitment to tackle climate change by reducing greenhouse gas emissions and limiting global warming.
European Commission (2019)	European Green Deal (2019): A comprehensive policy initiative by the European Commission that aims to transform Europe into a climate-neutral continent by 2050. It emphasises the enhancement of Europe’s competitiveness while achieving sustainability goals.	A transformative agenda towards achieving climate neutrality and boosting competitiveness in Europe by 2050.

Emerging from this context is the notion of “green organisational physiology.” Rooted in the broader idea of organisational physiology (Vlados, 2004; Coda, 2010; Chatzinikolaou & Vlados, 2023), it posits that as the world pivots towards a green economic mindset, firms must reshape and grow in ways that prioritise sustainability, innovation, and ecological responsibility (Hofstetter, 2021). For instance, Chang *et al.* (2019) emphasise the critical interplay between green organisational identity, a shared vision for sustainability, and outcomes like environmental citizenship behaviour and green product development. This highlights the necessity of aligning an organisation’s essence and objectives with ecological imperatives for enhanced competitiveness and eco-performance. Building on this, Ott and Reinmuth (2021) argue for a more profound and encompassing perspective that integrates economic assessments with ethical, cultural, and philosophical values, echoing the culture of green organisational physiology that champions sustainable and eco-conscious practices.

Thus, this transformative physiological perspective is not merely an operational adjustment. It requires a deep-seated reimagination of organisational DNA (Baskin, 1998). This means organisations should embody principles that foster open and ecosystemic

innovation and ensure sustainable growth from their core mission to their peripheral operations. Only then can businesses align themselves with the emerging trajectory of the new globalisation and become active contributors to a world defined by green development goals. In essence, green organisational physiology is about recalibrating an organisation’s vision (philosophy) and strategy, technology, and management practices in line with sustainable growth objectives (Vlados, 2004; Chatzinikolaou & Vlados, 2023).

In summary, the dynamics of the new globalisation herald an era where the culture of the green economy takes centre stage. Supported by the SDGs and global agreements, this necessitates a profound reflection on organisational structures and innovation methods for all types and sizes of organisations. While overarching policies, geopolitical shifts, and ecological concerns set the context, the nuanced transformations will be shaped by how organisations reshape their intrinsic character to be ecologically conscious. The impending challenge is more than just navigating change; it’s about integrating this new priority into the organisational framework and culture. Subsequent sections of this text will delve into how literature navigates the realm of green entrepreneurship within these evolving global circumstances.

**Results: The Green Organisational Corridor in the New Globalisation**

Today’s organisational goals for the new global reality increasingly revolve around Resilience, Adaptability, Sustainability, and Inclusiveness (World Economic Forum, 2018, 2019). However, we contend that no clear directions exist for achieving these objectives. A RASI synthesis (Resilience, Adaptability, Sustainability, Inclusiveness) could contribute to comprehensively understanding these demands. In this integrated view:

- Organisational resilience refers to successfully addressing pressing and unprecedented conditions, signalling the organisation’s capability to recover from a crisis (Li, 2020; Al-Atwi *et al.*, 2021; Sreenivasan *et al.*, 2022).
- Organisational adaptability is related to survival despite continuous changes in the external environment through exploiting emerging comparative opportunities, avoiding corresponding threats, and organisational learning-relearning (Vlosos, 2019; Fan *et al.*, 2020; Khalil & Nabil, 2021).

- Organisational sustainability relates to ways of direct response to current pressing problems by considering future transformations of the external environment and long-term viability prospects (Kilintzis *et al.*, 2020; Buhusayen *et al.*, 2021; Onyama, 2021).
- Organisational inclusiveness refers to why leadership diffuses a culture of diversity, tolerance, and mutual respect, potentially leading to creativity, innovation, and improved performance (Das, 2021; Kuknor & Bhattacharya, 2021; Linkov *et al.*, 2022).

The green organisational orientation can presumably lead to RASI synthesis in the emerging new era. The literature usually treats green business development as a result of innovation, strategic management, and related managerial processes including marketing (Ma *et al.* 2018, Ling 2019). The following analysis examines these dimensions individually, tabulating recent definitions and focal points. Table 3 captures developments in

Table 3: Recent perspectives on green strategy

Source	Paraphrased Excerpt	Main Idea
Han <i>et al.</i> (2022, p. 1422)	A company’s green strategies are actions taken to protect the environment, such as reducing pollution and developing and selling environmentally friendly products.	Firms engage in environmental protection and eco-friendly activities through green strategies.
Mak and Chang (2019, p. 49)	Environmental strategies can be either reactive or proactive. Reactive strategies respond to external pressures, while proactive strategies go beyond regulatory requirements.	There are two types of environmental strategies: Reactive and proactive.
Mansoor <i>et al.</i> (2021, p. 4)	Although a green strategy is vital for boosting green performance, it must be supplemented with human resource procedures to improve employees’ green performance.	A human-centred approach is required to enhance green performance through a green strategy.
Panda (2021, p. 3)	The implementation of a green strategy can positively affect both income and expenses, aiding in the growth of the organisation.	Adopting a green strategy yields positive effects on an organisation’s financial health and evolutionary trajectory.
Saether <i>et al.</i> (2021, p. 2391)	Companies that execute a green strategy are more inclined to originate, accept, and put into practice green innovations.	Pursuing a green strategy often results in the inception of green innovations.



green strategy terminology, presenting issues such as an internal-external organisational environment synthesis, green innovation, or human-centredness.

The approach to green strategy refers to actions aimed at organisational development by simultaneously protecting the environment. According to these presented definitions, such contemporary green strategic systems result from combining internal—primarily human-centred—development and external influences, progressively leading to the imperative of eco-innovation. Next, Table 4 lists contributions to green technology that focus on related concepts such as environmental awareness,

organisational knowledge, green innovation, or capital intensity.

Green (or clean) organisational technology relates to the knowledge possessed and developed by an organisation to produce products and services with a reduced or zero environmental footprint. In this context, success is often defined as achieving economic viability while significantly minimising environmental impact. Today's organisations that effectively combine green internal and external technologies tend to be innovation-driven, successful according to this definition and generally require significant capital investments. Notably, integrating Industry 4.0, also known as

Table 4: Diverse approaches to defining green technology

Source	Paraphrased Excerpt	Main Idea
Cooke (2010, p. 833)	Clean technologies cover various aspects of energy, materials, manufacturing, infrastructure, transportation, and waste treatment, utilising renewable resources. The emphasis is on new or recombinant technologies.	Clean technologies encompass different areas related to energy, manufacturing, transportation, and waste treatment, emphasising new or recombinant technologies.
Cowling and Liu (2021, p. 7)	SMEs inclined towards cleantech, seeking to sustain or enhance its use, are usually larger, high-growth, high-tech firms. This hints that cleantech adoption requires substantial resources and risk, potentially influencing investment choices.	The adoption of cleantech is resource-intensive and risky, which affects investment decisions.
Hu <i>et al.</i> (2022, p. 3)	Green technology aims to decrease energy usage, mitigate environmental pollution, foster ecological civilisation, and ultimately establish a balance between humans and nature.	Green technology seeks to achieve environmental sustainability and human-nature harmony.
Orsatti <i>et al.</i> (2020, p. 1)	Grasping the precursors of green knowledge creation, including discovery dynamics, is vital for firms' strategic positioning in the Green Technology sphere.	Knowledge generation in the Green Technology domain is critical for firms' positioning strategies, and understanding discovery dynamics is crucial.
Ren <i>et al.</i> (2022, p. 4)	Green technological innovation is an interconnected process facilitating the creation of less detrimental products and production methods. Every smaller segment of this intricate process influences the eventual result of technological innovation.	The process of green technological innovation is interconnected, with each smaller segment affecting the final result.
Zhang <i>et al.</i> (2022, p. 1)	Green technology is a technological innovation that combines economic benefits with addressing environmental problems.	Green technology combines economic benefits and environmental protection through technological innovation.

digital transformation, can further enhance an organisation's environmental performance. As suggested by Fonseca (2022), such integration has the potential to contribute positively to environmental impacts, effectively marrying technological advancements with sustainable practices. Next, Table 5 presents definitions of green management that explore dimensions such as eco-innovation, efficient use of green resources, or organisational transformation.

Green management means designing and implementing practices that help contemporary organisations efficiently manage internal and external resources oriented toward protecting the environment. These green management practices primarily arise from internal organisational environmental concerns and lead to eco-innovation. The presented definitions show that green strategic management processes increase the chances of innovative development in the

Table 5: An assortment of green management definition perspectives

Source	Paraphrased Excerpt	Main Idea
Alzgoool <i>et al.</i> (2019, p. 2076)	Practices related to environmental sustainability can enhance the judicious use of resources, curtail waste, including those from natural bodies, and mitigate greenhouse gases and carbon emissions.	Green management practices can promote efficient resource use, minimise waste, and reduce greenhouse gases and carbon footprints.
Ansari <i>et al.</i> (2022, p. 3)	Adopting environment-friendly management strategies can result in diminished manufacturing expenses through effective utilisation of raw materials, waste curtailment, minimal energy expenditure, and eradication of unnecessary production methods. These sustainable measures can yield both fiscal and ecological performance improvements for businesses.	Green management practices can reduce production costs and improve financial and environmental performance.
Lun <i>et al.</i> (2016, p. 46)	Implementing sustainable management techniques can yield possible advantages such as decreased expenses related to energy consumption, procurement of materials, waste production, and waste emissions.	Green management practices can reduce energy consumption, materials used, and waste generated.
Naruetharadhol <i>et al.</i> (2021, p. 1)	Small firms that engage in green management practices may not participate enough in formal eco-friendly activities, hindering their ability to find alternative ways to eco-innovate.	Small firms engaging in green management practices must participate more in formal eco-friendly activities to eco-innovate.
Shu <i>et al.</i> (2020, p. 799)	Green management strategies involve risks, call for innovation, and demand significant alterations. A transparent and mutually agreed understanding of the external environment can assist businesses in mitigating internal opposition, harmonising conflicting interests, and implementing sustainable strategies across different departments or teams.	Implementing green management strategies necessitates a transparent and mutually agreed understanding of the external environment to mitigate opposition, harmonise conflicting interests, and facilitate department-wide adoption.
Zhou <i>et al.</i> (2019, p. 568)	The innovation of a firm and its environmental sustainability measures are susceptible to external environmental shifts. The effect of environmental fluctuations on the correlation between a firm's innovation and green management is uncertain. However, strategic, managerial innovation, and environmental sustainability success depend on environmental fluctuations.	The relationship between a firm's innovative approaches and environmental sustainability is influenced by environmental fluctuations, affecting the success of strategic and managerial innovation and green management.

Table 6: Green marketing viewpoints

Source	Paraphrased Excerpt	Main Idea
Chen <i>et al.</i> (2019, p. 3)	The idea of green marketing can be considered as a progression of an enterprise's systems and practices of environmental management, the aim of which is to prevent environmental damage and foster protection of the environment.	Green marketing is a progression of an enterprise's environmental management systems that foster environmental conservation.
Mukonza and Swarts (2020, p. 838)	Green marketing implies the resolve of businesses and institutions to create harmless and environmentally considerate products and services. This covers using recyclable, reusable, and decomposable green packaging, pricing that accounts for both economic and ecological factors, green promotion to enlighten stakeholders about conserving the environment, green distribution that reduces environmental harm, and cultivating an environmental mindset among individuals.	Green marketing involves developing eco-friendly products, pricing, promotion, distribution, and promoting a green mindset.
Rajput <i>et al.</i> (2022, p. 729)	Green marketing refers to promoting environmentally friendly goods through product and manufacturing process alterations and modifications to packaging. As consumers become more aware of the harmful effects of non-biodegradable waste and pollutants, marketers and consumers are switching to eco-friendly products and services. Green marketing is a holistic marketing approach that promotes the development of products and services that are less harmful than conventional ones.	Green marketing endorses eco-friendly products and services through modifications to the product and production process and represents a comprehensive marketing approach.
Tabavar <i>et al.</i> (2021, pp. 120-121)	Green marketing is an all-inclusive management process geared towards fulfilling the demands of consumers and the community in a way that is both sustainable and profitable. It is strongly connected to corporate social accountability.	Green marketing represents a sustainable and profitable management process that caters to the needs of the consumers and community.
Tsai <i>et al.</i> (2020, p. 1)	Green marketing motivates customers to buy green products, thus reducing environmental pollution. Most businesses prioritise green marketing to boost green products and enhance consumers' recognition and trust in the brand, subsequently increasing their buying intentions.	Green marketing fosters the purchase of environmentally friendly products and seeks to reduce pollution through consumer encouragement.

new globalisation. Next, Table 6 lists green marketing developments such as sustainable consumption or green mix.

Green marketing is about how firms support the development of customer environmental awareness and sustainable consumption. It is a management process usually resulting from

coevolving organisational structures including environmental management systems and corporate social responsibility frameworks. From the recent definitions presented, it is clear that green customer-centric marketing in the new globalisation can lead organisations on a path of sustainability as consumers increasingly

prefer green products and services. <sup>1</sup>Next, Table 7 shows what green innovation means in the recent literature, emphasising aspects such as cross-organisational green development, cleaner production, or reinforced organisational sustainability.

We define green innovation as the continuous transformation of the organisation toward an ecologically friendly, sustainable direction, simultaneously reproducing elements of social cohesion, sensitivity, and inclusion. Thus, it is concerned explicitly with improving

Table 7: Multiple approaches to defining green innovation

Source	Paraphrased Excerpt	Main Idea
García-Sánchez <i>et al.</i> (2020, p. 3)	Eco-innovation embodies a variety of new strategies that businesses can employ to manage resources better and decrease their environmental impact throughout the multiple stages of their value chain.	Eco-innovation refers to various innovative practices that firms can adopt to reduce their ecological footprint.
Karimi Takalo <i>et al.</i> (2021, p. 2)	Eco-innovation or green innovation signifies the creation of novel technologies and manufacturing procedures that mitigate environmental hazards like pollution and the negative effects of exploiting resources, including energy.	Eco-innovation or green innovation implies devising new technologies and manufacturing methods that diminish environmental hazards.
Kraus <i>et al.</i> (2020, p. 3)	Green innovation includes advancing technology to reduce waste, global warming, and air pollution. It encompasses conserving energy and resources such as water, coal, and oil. Green product and process innovation curtail the businesses' adverse environmental effects and boost their social and fiscal performance by trimming costs and waste.	Green innovation involves developing technology to reduce environmental impact and improve social and financial performance.
Li <i>et al.</i> (2018, p. 463)	Green innovation denotes the embracement of inventive practices by corporations, like novel technologies, services, products, administrative structures, or managerial modes, to reach sustainable development. Green innovation underlines innovation towards sustainability, aiding in the reduction of environmental burdens.	Green innovation involves enterprises adopting innovative practices to achieve sustainable development and reduce environmental burdens.
OECD (2009, p. 2)	Eco-innovation symbolises innovation leading to an environmental impact reduction, regardless of whether the effect was intentional. Eco-innovation can surpass the innovating organisation's confines and implicate broader social configurations that instigate changes in current socio-cultural norms and institutional structures.	Eco-innovation represents innovation that diminishes environmental impact and can extend beyond the innovating organisation's limits.

<sup>1</sup> While green marketing is crucial in examining the greening of organisational development, it is important to note that green lean performance and green operational performance are also significant areas of investigation within the existing literature, even though they may not be explicitly included in the presented framework. Green-lean performance refers to the integration of environmentally friendly practices within lean management, aiming to reduce waste and enhance efficiency while minimising environmental impact (Singh *et al.*, 2021). On the other hand, green operational performance focuses on the implementation of sustainable practices within the operational aspects of an organisation, such as production, logistics, and supply chain management, to improve environmental performance and sustainability (Wang *et al.*, 2023).

<p>Pérez-Pérez <i>et al.</i> (2021, p. 9)</p>	<p>Eco-innovation pertains to organisations' restructuring of practices, procedures, frameworks, and systems to tackle environmental issues and enhance their performance. This comprises the execution of environmental management systems, more ecologically productive supply chain management, and employee or collaborator training programs on environmental sustainability matters.</p>	<p>Eco-innovation entails restructuring organisational practices, procedures, systems, and structures to tackle environmental issues and bolster performance.</p>
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production structures to strengthen overall green organisational efficiency. In the literature reviewed, green innovation is today a determining factor of dominance over rivals as it inevitably diffuses across the organisation that builds and implements these actions.<sup>2</sup> Finally, Table 8 presents the determinants of green change management, a newly emerging trend focusing on organisational aspects such as the universal embedding of a culture that builds

environmentally friendly processes or the sustainability assessment.

Green change management theorises organisational responses to the green changes of our time, suggesting the need to adopt corporate mechanisms to measure organisational sustainability. This management process establishes a green culture by renewing the entire organisational strategy. Green change management is a relatively new concept, rarely investigated by the relevant literature.

Table 8: A range of perspectives on green change management definitions

Source	Paraphrased Excerpt	Main Idea
<p>Aggarwal and Agarwala (2021, p. 6)</p>	<p>Applying green training in HR contributes to raising employees' understanding of ecological adaptations and fosters an environmental-friendly culture in the company through rewards, incentives, and training modules.</p>	<p>Implementing green training and rewards in HR enhances employees' consciousness and fosters an eco-friendly culture.</p>
<p>Bose and Luo (2012, p. 5)</p>	<p>Environmental IT strategy can be implemented through technological changes and organisational policies to improve IT and business infrastructures in an environmentally responsible manner.</p>	<p>Environmental IT strategy can be realised through technological and behavioural changes.</p>
<p>Sroufe (2017, p. 317)</p>	<p>Sustainability professionals can influence a sustainability paradigm in organisations, from vision to performance management, by fostering collaboration and innovation throughout the value chain. There are opportunities for organisations to leverage sustainability for better performance management and risk integration.</p>	<p>Sustainability professionals can drive sustainability integration through collaboration and innovation, with opportunities for better risk integration and performance management.</p>

<sup>2</sup> Another noteworthy thread of literature eloquently expounds on the topic of green innovation. This body of work positions green innovation as conceptually adjacent to environmental sustainability, underscoring its importance in developing new products or procedures. It also emphasises the role of green innovation in creating tools, techniques, systems, and practices that deliver value to businesses and consumers while respecting the environment (Chang & Chen, 2013; Song *et al.*, 2019; Ghobakhloo *et al.*, 2021; Huang *et al.*, 2022). The necessity of green innovation lies in its potential to mitigate environmental risks, curtail pollution, and lessen the adverse impacts of resource use. This can be achieved through strategies such as minimising raw material consumption and adopting eco-friendly product designs, both aimed at reducing emissions and material usage (Fonseca *et al.*, 2022).

### Discussion: The Green Stra.Tech.Man Scorecard

The preceding section explored green organisational dimensions for the contemporary era. We propose that integrating these theoretical perspectives could facilitate the green development of organisations in the context of the new globalisation. To this end, we present the Stra.Tech.Man synthesis and attempt to modify the scorecard based on this approach.

Vlados (2021) posits that the strategy-technology-management synthesis (Stra.Tech.Man) forms the heart of any “living organisation,” leading to innovation (Figure 2). Building on this, we present the Stra.Tech.Man Scorecard, a theoretical tool designed to diagnose organisational physiology by analysing 40 basic Stra.Tech.Man determinants. This scorecard is a comprehensive tool for assessing an organisation’s health, providing valuable insights into its strategy, technology, management, innovation, and financial performance.

In the Stra.Tech.Man approach, strategy, technology, and management are considered as the exploration of “where am I and how do I get to the desired destination,” “how do I draw, create, synthesise, and diffuse my expertise,” and “how do I use my available resources,” respectively. These three compound questions constitute the organisational physiology or the unique biological identity of all socioeconomic organisations<sup>3</sup> (Hodgson, 1993; Witt, 2006).

The Stra.Tech.Man Scorecard presents a departure from Kaplan and Norton’s (1996) ground-breaking Balanced Scorecard (BSC) approach by applying it to organisations of all sizes and industry specialisations in systematic organisational self-assessment. While it acknowledges financial performance as a key indicator of organisational health, mirroring the BSC, it integrates facets of strategy, technology, and management that are vital to success yet examined from a unique combinatorial

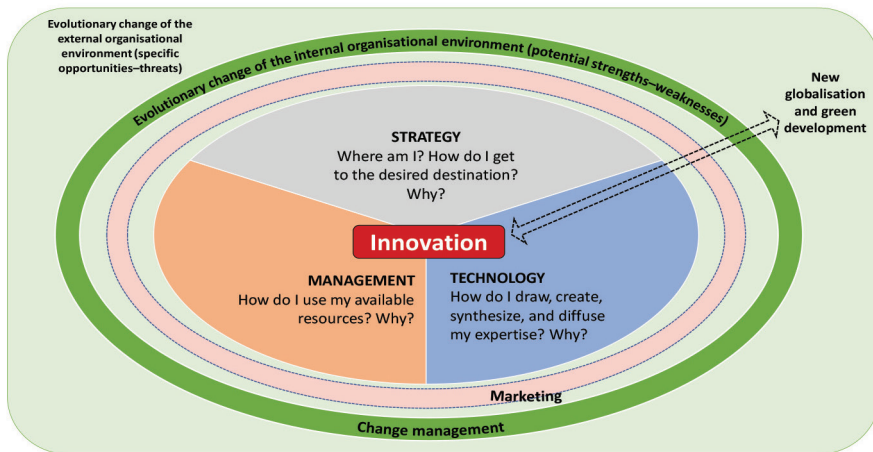


Figure 2: The Stra.Tech.Man core, based on Vlados (2021)

<sup>3</sup> While the Stra.Tech.Man scorecard initially appears to be applicable solely to business entities, it is designed to be universally adaptable to any socioeconomic organization. The three core components: Strategy, technology, and management, are operational fundamentals regardless of the specific nature or aim of the organization. While the precise metrics used in the scorecard might vary based on the type of organization, the essential structure of the Stra.Tech.Man approach remains applicable. The scorecard simply needs to be adapted to the specifics of the organization in question, much like the organization itself adapts to its unique challenges and environments.

perspective (Figure 3). Within this framework, the strategy component broadens and refines the BSC's customer approach. The technology element aligns with the BSC's approach to organisational learning and growth, while management zeroes in on efficient resource utilisation, echoing and analytically reshaping the BSC's perspective on business processes.

In the Stra.Tech.Man Scorecard, execution is not isolated as an independent facet. Rather, it permeates all three realms: Strategic execution, technological execution, and managerial execution. These areas succeed in planning in each respective sphere and precede control and assessment on all three tiers. This holistic methodology guarantees that planning, execution, and result monitoring are intrinsically woven into the Stra.Tech.Man Scorecard framework.

The Stra.Tech.Man Scorecard process necessitates the involvement of one or more senior executives who are tasked with gauging the degree of change in five key areas: (I) Strategy, (II) technology, (III) management, (IV) innovativeness, and (V) financial performance. This assessment, which incorporates elements

of self-evaluation and action research (Eden & Ackermann, 2018), requires respondents to rate their perceptions over the past three years and at present on a 5-point scale.

Accompanying these scores is an open-ended section where executives are encouraged to provide context for their ratings. The final average score and qualitative analysis can indicate potential areas of strength or weakness. We advise engaging a specialised consultant to interpret and evaluate these measurements and responses, culminating in a detailed report of the Stra.Tech.Man audit methodology's findings.

Regarding frequency, we recommend annual data collection, preferably with the support of external advisors who can provide a comprehensive assessment of the organisation's health. Any deviations observed during this process can serve as catalysts for intra-operational brainstorming and reevaluation, potentially redirecting the organisation's overall trajectory.

The Stra.Tech.Man Scorecard shares similarities with other business models such as the EFQM 2020 model. The EFQM 2020 model, as described by Fonseca (2022), is based on the

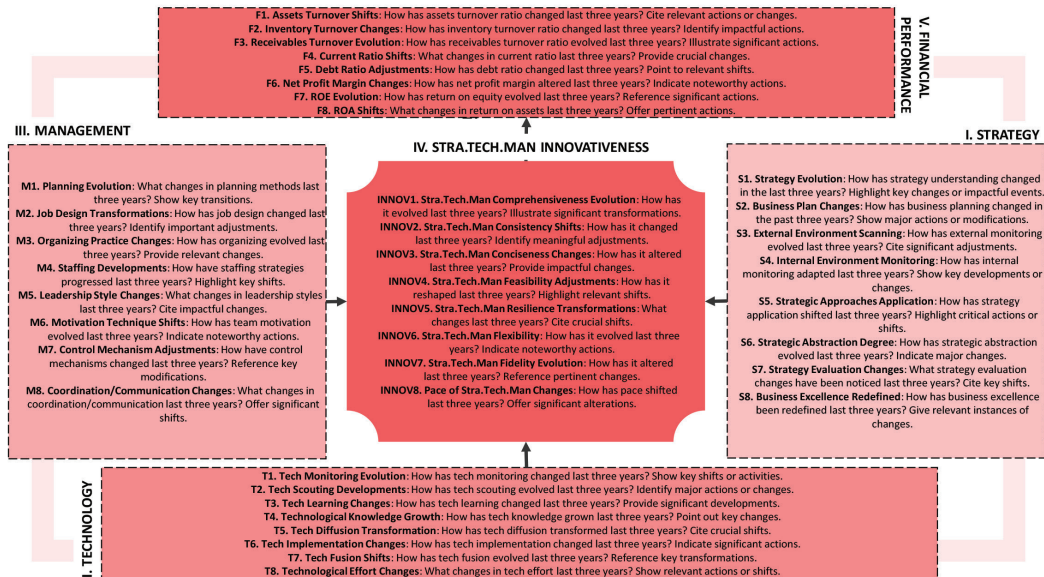


Figure 3: The Stra.Tech.Man Scorecard (the basic mechanism), based on Vladoš (2021)

principles of Why (direction), How (execution), and What (results) and integrates sustainability within the organisation’s purpose and strategy. Similarly, the Stra.Tech.Man Scorecard also emphasises resilience, adaptability, sustainability, and inclusiveness. However, it extends these principles by incorporating strategy, technology, and management dimensions.

Our team’s recent research indicates a correlation between the various RASI dimensions and the overarching organisational goal, a connection crucial during the current phase of nurturing the new globalisation wave. We have broadened the initial questionnaire to encompass an additional eight factors, encouraging executives to self-assess various issues in a method consistent with the foundational Stra.Tech.Man mechanism, as illustrated in Figure 3. The resulting mean and qualitative analysis project the likelihood of success or failure in achieving the RASI objective, as shown in Figure 4.

This modification of the scorecard reinforces (VI) resilience, (VII) adaptability, (VIII) sustainability, and (IX) inclusiveness within organisations. In particular, the “Stra.Tech.Man–RASI Scorecard” is especially noteworthy

during times of crisis, as demonstrated during the COVID-19 pandemic and the Russo-Ukrainian conflict. These events accelerated the move towards the fourth industrial revolution and energy transition, respectively (Schwab & Malleret, 2020; Menu & Repko, 2022).

In this study, we propose the dimensions of green organisational development as a response to the RASI target. We argue that an organisation’s greenness is a pathway to enhance the goals of resilience, adaptability, sustainability, and inclusiveness. Figure 5 illustrates the green perspective in this organisational evolutionary auditing approach.

This segment of the proposed counselling methodology prompts the respondent like the other elements of the Stra.Tech.Man Scorecard. Based on the definitions examined in the previous section, we introduce the following 12 queries:

- (X) Green strategy: (1) Does the organisation plan and implement a vision aimed at organisational development by simultaneously protecting the environment? (2) Do the organisation’s green strategies result from external pressures, internal processing, or a combination of these?

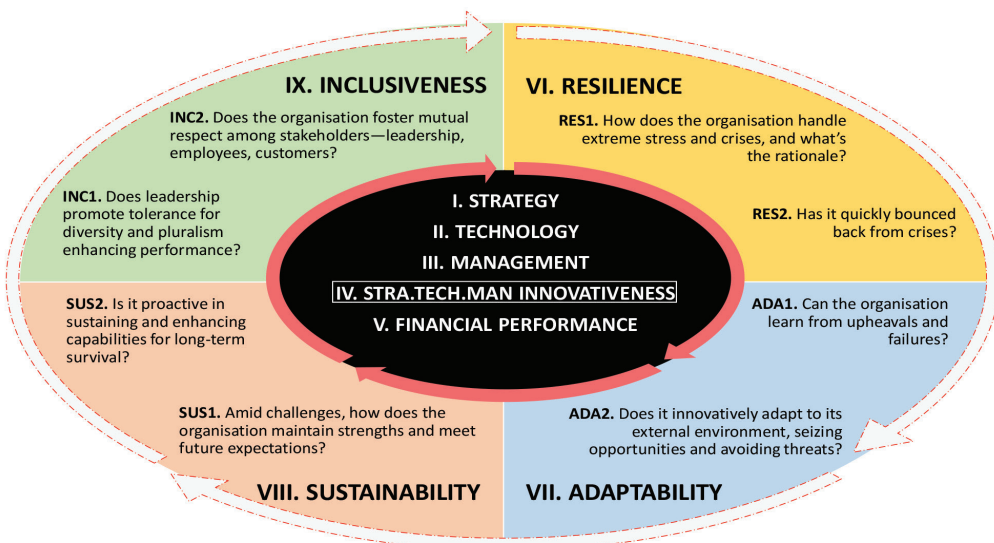


Figure 4: The “Stra.Tech.Man–RASI Scorecard” (the target)





Figure 5: The Green Stra.Tech.Man Scorecard (a green corridor)

- (XI) Green technology: (1) Does the organisation possess adequate knowledge of developing green technologies to produce products and services with a reduced or zero environmental footprint? (2) Does the organisation combine different green technologies to innovate?
- (XII) Green management: (1) Does the organisation design and implement cost-efficient practices for managing green internal or external resources? (2) Does the organisation use green management practices out of environmental awareness by aiming for organisational innovation?
- (XIII) Green marketing: (1) Does the organisation ensure that the products or services promote green consumption? (2) Does the organisation have marketing processes based on formal corporate social responsibility and environmental management systems?
- (XV) Green innovation: (1) Does the organisation support its ongoing green transformation? (2) Is the organisation improving its production structures to enhance green organisational efficiency and sustainability?
- (XVI) Green change management: (1) Does the organisation apply methods to measure its sustainability over time? (2) Does the green organisational culture change systematically through strategic reappraisal?

These questions serve as diagnostic tools for the green Stra.Tech.Man physiology, facilitating the identification of relative organisational strengths and weaknesses in green practices. The definitions provided in Tables 3 to 8 can assist respondents in completing the questionnaire and also function as a guide for interpretation by any interested internal or external consultants. Mirroring the approach of the other Stra.Tech.Man Scorecard frameworks, the final averages and qualitative analyses reveal if the organisation tends to follow greener practices or adopts polluting practices that result in inefficiencies.

In conclusion, the “Integrated Stra.Tech.Man Scorecard,” demonstrated in Figures 3 to 5, possesses a unique methodology but shares common aspects with other frameworks used to evaluate potential organisational development. It is designed with universality as its core principle and can be adapted across any socioeconomic organisation.

However, it particularly addresses the emerging priorities for all organisations in the present scenario, where the budding new globalisation is at the epicentre. This scorecard provides an integrative, adaptable approach to assessing an organisation's health within the context of this new globalisation and environmentally-conscious organisational development.

## Conclusion

This study presented a sophisticated, multi-layered auditing mechanism to evaluate an organisation's health. Our analysis employed the core synthesis of strategy, technology, and management (Stra.Tech.Man) and the overarching RASI objective (Resilience, Adaptability, Sustainability, Inclusiveness) within the context of a green-oriented approach. These three components form distinct yet interconnected scorecard frameworks, cumulatively referred to as the Integrated Stra. Tech.Man Scorecard (Figures 3 to 5). This pioneering consulting instrument could enable extensive action research for organisations navigating the dawn of a new era of globalisation.

Our primary contribution lies in the development of the Green Stra.Tech.Man Scorecard, a new approach to evaluating green initiatives. This scorecard enables examining the multifaceted aspects of greenness, determining how an organisation meets the RASI objectives through green innovations and sustainable development. Therefore, the Green Stra. Tech.Man Scorecard serves to monitor if the organisational transformation derived from the Stra.Tech.Man synthesis leads to achieving the RASI objectives via green business processes.

Furthermore, we have satisfactorily addressed the research questions RQ1 and RQ2, proposed in the introduction. RQ1 queried the latest approaches to green structures, systems, and organisations. We responded by conducting an integrative, critical literature review and channelled the insights into the development of the Green Stra.Tech.Man

Scorecard. This scorecard encapsulates the most recent developments in green organisational structures and systems, offering organisations a holistic tool to evaluate and enhance their green prospects.

RQ2 centred on methods to document, analyse, diagnose, and bolster green growth in organisations. In response, we put forward the Green Stra.Tech.Man Scorecard, designed to enable organisations to record their current status, analyse their performance, identify improvement opportunities, and fortify their green growth perspectives. Thus, it offers a practical solution to RQ2, providing organisations with a proactive and auditing mechanism to improve their green performance.

Nonetheless, this study is not without constraints. The proposed framework is theoretical and requires further systematic empirical verification. Future research should focus on validating the framework in different organisational and sectorial settings to confirm its reliability and validity. Exploring its effectiveness across various industries and geographic locales could also yield valuable insights, leveraging the Stra.Tech.Man synthesis in line with previous studies that employed this approach (Vlados & Chatzinikolaou, 2019; Falaras & Moschidis, 2021; Chatzinikolaou & Vlados, 2022).

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## Conflict of Interest Statement

The authors declare that they have no conflict of interest.

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