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**SUSTAINABILITY INTEGRATION IN PROJECT MANAGEMENT: BALANCING PROFITABILITY,
PEOPLE, AND PLANET**

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Abstract

In the present-day environmental and socio-economic conditions the classical project management approach, characterized by the minimization of the short-term economic loss and optimization of the “Iron Triangle” parameters, is becoming increasingly difficult to maintain. This paper discusses the theoretical underpinning, mechanism of structures and operability of comprehensive integration of sustainability into project management process. It is based upon the Triple Bottom Line (TBL) and the Stakeholder Theory, which explores the unique balancing of three factors: Profit, People, and Planet. We discuss and examine how traditional project management approaches (such as PRINCE2, PMBOK, etc.) can be re-engineered into Sustainable Project Management (SPM) approaches. The paper examines the potential of advanced Life Cycle Assessments (LCA), circular procurement models and project financing linked to environmental, social and governance (ESG) scorecards as drivers for this transition. Moreover, we explore the fundamental institutional and operational challenges toward carrying out sustainability integration, including the “green premium,” the cognitive discounting of long-term benefits, and systemic structural inertia. In conclusion, the paper proposes a strategic maturity model to help project leaders make the leap from compliance to purpose-driven, sustainable value creation, positing that future project success will necessarily hinge on sustainable balance.

Keywords: Sustainable Project Management (SPM), Triple Bottom Line, Stakeholder Theory, Circular Procurement, ESG, Life Cycle Assessment.

1. Introduction and Problem Statement

Until now, project management has been a transactional business. Projects have been considered as a short-term effort for the purpose of delivering specific outcomes against short-term constraints such as cost, programme speed and technical requirements that are specific to a particular location (Silvius, 2021). In this classical utilitarian approach, broader externalities (carbon emissions, ecological damage, resource depletion, labour exploitation, etc.) were logically sorted into the externalities category and/or pushed to the margins of risk registers.

But this “island approach” to operations is in danger in the current macroeconomic market. Social and institutional expectations have changed due to the progression of the global climate crisis, the system-wide decline in biodiversity and growing social injustices. There are no

longer only quarterly measures of fiscal yield to assess organisations but the net contribution to global and local ecosystems (Marcelino-Sádaba et al., 2023; Gareis et al., 2013). This shift has led to the development of Sustainable Project Management (SPM), which is the planning, monitoring and controlling of project delivery and support processes in such a way that environmental, social and economic issues are relevant to the project life cycle (Silvius & Schipper, 2014).

While businesses around the world are making more statements about Environmental, Social and Governance (ESG) principles, there is a significant gap in their implementation. Project managers regularly find themselves in intense structural conflicts: they are required by corporate public relations to perform "green" projects but they are structurally incentivized, audited and rewarded following traditional, cost reduction criteria (Sabini et al., 2019). As a consequence, there is a large scale phenomenon of "greenwashing" or cosmetic sustainability, where seemingly sustainable project supply chains and lifecycles are deeply unsustainable.

This paper remedies this structural disconnect by providing a thorough examination of project management architecture and its ability to be structured to incorporate the Triple Bottom Line. It addresses the fundamental issue of how project management methodologies can be structurally re-engineered to encourage profitability, social equity and environmental regeneration, while maintaining the operational viability?

Theoretical Framework

In order to create a stable structure for Sustainable Project Management, we need to abandon the ad hoc structure of models and anchor our analysis on two basic economic and organizational theories: the Triple Bottom Line (TBL) and Stakeholder Theory.

The Triple Bottom Line (TBL) in Temporary Organizations

It is a concept that was coined by John Elkington which states that organisations should measure their performance in three areas – economic prosperity (Profit), social justice (People), and environmental quality (Planet) (Elkington, 1997). TBL is founded on the concept of permanent, ongoing corporations, but can be applied to temporary corporations (projects) if an analytical transformation is made.

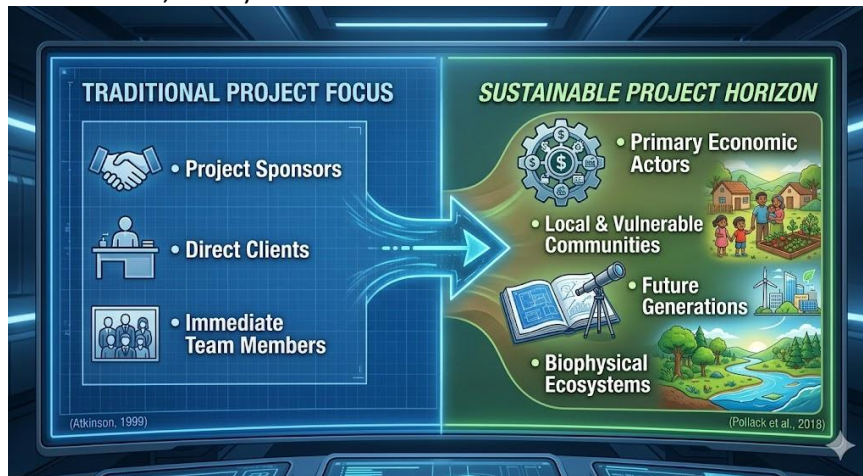
Projects are always intensive and high velocity users of resources and capital. Projects have sudden and jarring impacts on communities and environments, as opposed to permanent operations, which aim for steady-state efficiencies. Applying TBL to project management therefore shouldn't only consider the sustainability of the project's end product (e.g. an energy efficient building), but also the sustainability of the project's delivery process (e.g. reducing carbon emissions in the construction phase) (Silvius, 2021).

Stakeholder Theory and the Extension of Project Horizons

The Stakeholder Theory, by Edward Freeman, states that a company's "fiduciary and ethical responsibilities to all parties and individuals that can influence or be influenced by the firm's success" (Freeman, 1984). Traditional project management approaches use a very narrow focus on the project stakeholders — concentrating on the main economic stakeholders: project sponsors, clients, and direct project team members.

This is expanded dramatically by Sustainable Project Management. In an SPM paradigm, the "stakeholders" are not only the secondary and non-economic actors, such as communities

near the project site, future generations who will inherit the project's long-term environmental impact, but also the biophysical environment itself, which is a silent but vital stakeholder (Chawla et al., 2021).



Stakeholder Theory changes the project manager's focus from input/output to outcome/impact, placing competing demands on the project manager in vastly long and wide time and space.

The Three Pillars of SPM: Mechanics of Balance

Balancing all three pillars of sustainability will demand a detailed view of where all three dimensions relate for the project lifecycle.

The Economic Pillar (Profit): Reconceptualizing Value

In Sustainable Project Management, profitability is not discarded, but rather redone. Initial Capital Expenditure (CapEx) tracking is an important part of traditional cost management. A narrow focus tends to ignore sustainable alternatives, as they have a higher upfront "green premium".

SPM provides Total Cost of Ownership (TCO) and Whole-Life Costing (WLC) models for replacing CapEx-driven decision-making. A holistic look at all expenses associated with the asset, from purchase to construction through operations and maintenance to asset's ultimate decommission, often shows that sustainable interventions are costlier, but also more profitable (Kerzner, 2022).

The mathematical perspective shows that initial costs for high-efficiency materials or renewable energy systems significantly diminish operational costs (OpEx) over the asset's multi-decadal lifetimes and explicitly demonstrate profitability and planetary protection can go hand-in-hand.

The Environmental Pillar (Planet): Life Cycle Assessment and Regeneration

The environmental pillar calls for ecological neutrality at least and ideally, for a net positive environmental impact of projects. This is achieved by embedding Life Cycle Assessment (LCA) tools and methods within the project initiation and planning processes (Mavi & Standing, 2018). Project teams use LCAs to determine the amount of carbon emissions, embodied energy and environmental impacts each material and process chosen has. This data is used in circular

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procurement processes, in which the selection of materials focuses on those that are possible to unmake, recycle or return to the natural cycle at the end of the project life, thus avoiding the traditional 'take-make-waste' industrial model.

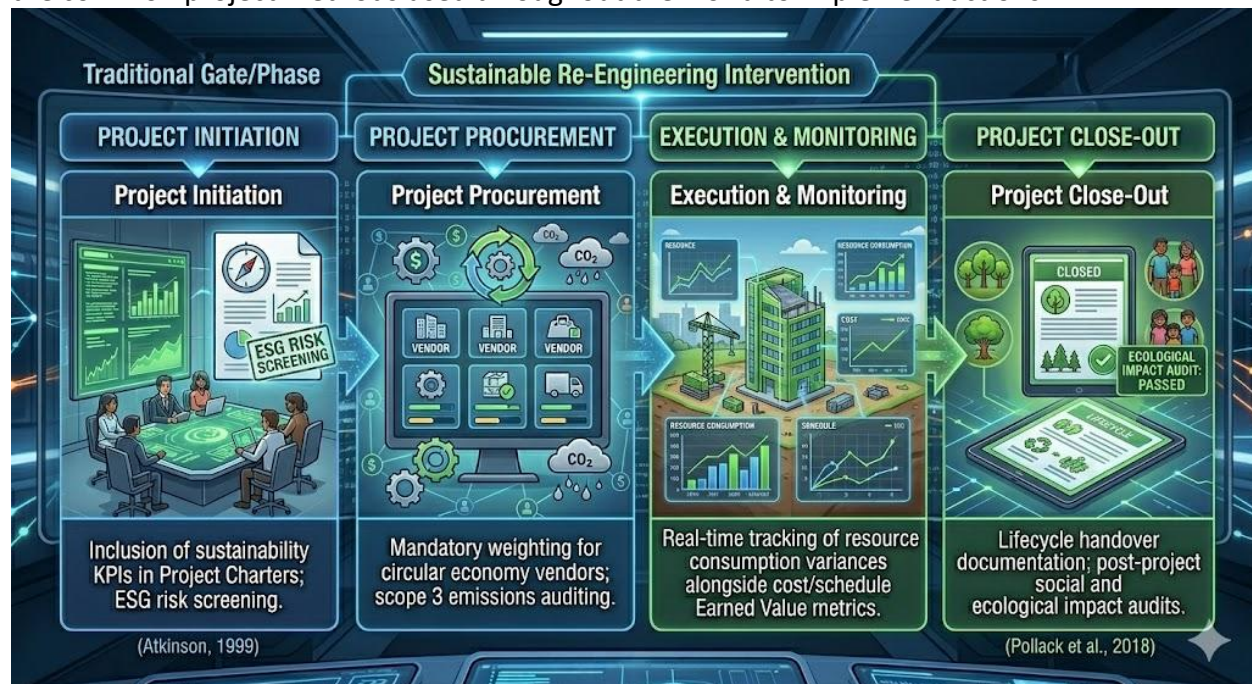
The Social Pillar (People): Intra-generational and Intergenerational Equity

The social pillar ensures that projects respect human dignity, well-being of the communities and integrity of the labor. In project management, this plays out along two dimensions:

- **Internal Equity:** Providing a project team and subcontractors with excellent labor standards. This involves ensuring living wages, strict occupational health and safety practices, and psychological safety in high stress project settings (Müller et al., 2022).
- **External Equity:** How to handle the social issues and effects of the project on neighboring communities. This needs participatory planning processes, free, prior and informed consent (FPIC) for localized developments and proactive measures to not drive vulnerable populations into economic marginalisation or displacement.

Methodological Re-Engineering: Sustainable PM Frameworks

Sustainability needs to be part of the project delivery process and it must become part of the common project methods used throughout the world to implement actions.



Upgrading Earned Value Management (EVM) to Sustainable EVM

In traditional Earned Value Management (EVM), the two key indicators are Schedule Variance (SV) and Cost Variance (CV), both against a monetary baseline (Anbari, 2003). Researchers today are suggesting Sustainable Earned Value Management (S-EVM) as a methodology to implement sustainability.

S-EVM: Non-monetary, environmental baselines in the monitoring cockpit. For instance, a project would be assigned a carbon or water budget in addition to the financial budget. If execution of the strategy brings carbon emissions above the predetermined environmental

limit, but it speeds up project completion time, then an adverse Carbon Variance (CarV) will be identified by the S-EVM system. Early warning to Project governance of an unacceptably high sustainability cost, which will result in immediate correction before the ecological budget is overrun.

Barriers to Systemic Integration

Institutional and behavioral barriers are enormous and severely hinder the adoption of Sustainable Project Management.

The "Green Premium" and Temporal Hyperbolic Discounting

The perceived or actual initial premium for sustainable materials and technologies is the biggest hurdle. Many organisations have short financial reporting cycles, so executive decision makers are faced with the challenge of hyperbolic discounting, the cognitive bias of over-valuation of immediate, short-term savings (low CapEx) and under-valuation of the significant long-term economic and environmental benefits (high OpEx savings) that accrue in future years.

Methodological Rigidity and Professional Inertia

Project management has a long history of using old, stable project execution templates. To date, sustainability has been considered a compliance requirement and has been taught as part of a "standard" training or in the context of known qualifications abroad. With the pressure to return a profit quickly, it is only natural that project managers don't want to place any additional restrictions on themselves or any additional reporting mechanisms into effect unless mandated by a strict regulatory structure or explicit monetary rewards.

6. Discussion: The Sustainable Project Management Maturity Framework

To overcome these challenges and provide an organized trip, we propose an operating Sustainable Project Management Maturity Framework for organization. The framework can be used to evaluate current structural capacity and plan how to develop capacity to undertake sustainable actions.



1. Level 1: Reactive Compliance: Just sees sustainability as a legal requirement. Interventions are purely reactive, opportunistic and have no intention of changing the

rules of the game.

2. Level 2: Tactical Optimization: The organization is aware of the immediate cost savings in resource efficiency. Waste reduction and energy optimisation are used to discrete parts of the project, mostly because of the local economic gains.
3. Level 3: Strategic TBL Integration: The Triple Bottom Line is incorporated into the organization's enterprise project management office (EPMO) in a systematic way. The following principles are standard requirements for all capital initiatives: S-EVM, circular procurement and whole-life costing models.
4. Level 4: Regenerative Governance: Projects start with the clear and underlying goal to heal broken socio-ecological systems. The project will aim to achieve measurable improvements in the biophysical and social ecosystem when compared to pre-project conditions, without sacrificing economic growth, by promoting environmental health and resilience.

Conclusion

Addressing sustainability in project management is no longer an 'ethical luxury' or a 'peripheral corporate social responsibility' issue. It's a paradigm shift in the way human action is conceived, funded, and implemented. The definition of "success" within a project has evolved over time, and can no longer be defined by the strict boundaries of the traditional Iron Triangle. Creating and delivering an asset on time and on budget is a hollow win when it comes at a cost of systemic damage to human workers, local communities, or planetary lifelines.

The project management discipline can liberate itself from the constraints of transactions by using the Triple Bottom Line and the Sustainable EVM and by implementing the technical advancements such as circular procurement and Whole-Life Costing. Systemic institutional inertia and cognitive biases must be overcome to get to regenerative governance. Those who learn Sustainable Project Management will safeguard themselves against future climate, resource and social risks and will be leading the way in the provision of resilient, long-term value for profitability, people and the planet.

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