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Sustainability, the fourth pillar of project portfolio management – a holistic approach

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SUSTAINABILITY,

THE FOURTH PILLAR OF PROJECT PORTFOLIO MANAGEMENT – A HOLISTIC APPROACH

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Abstract: Business leaders recognise that accomplishing tasks through projects allows them to maximise benefits by objectively addressing their organisational constraints, capacities and capabilities. They also acknowledge that sustainability is becoming an essential ingredient for long-term economic success. There does, however, remain the key question, what exactly is sustainability and how best to integrate it into the organisational practices, particularly the project environment. This paper pursues the premise that sustainability is strategic and distinct from functional and tactical project management processes. Integrating the principles of sustainability into project management should, therefore, deliver limited outcomes or lack a comprehensive solution that is flexible and adaptable to different business models, functions and situations. Project portfolio management (PPM), on the other hand, has a much wider application and perspective. It bridges project management with the overall organisational strategy, goals and objectives. Not only is PPM strategic, but it is a continuous process, unfettered by the limitations of individual projects or programmes. This research, therefore, proposes a conceptual framework that incorporates the principles of sustainability in PPM that is unrestricted by industry, allows prudence in resource management, stakeholder management, and validates transparency and accountability. This implies that PPM should extend beyond its current confines of selection and management of the project portfolio to include processes leading to corporate social responsibility (CSR) reporting and influences development of best practices which can then be recycled into improving project management and delivering sustainable outcomes.

1 INTRODUCTION

Today's competitive business leaders face the difficult question of how to invest wisely to benefit from the best returns whilst maintaining sustainable growth. To respond to this challenge, strategic implications of global trends should be interpreted and transformed into productive PPM (Brook and Pagnanelli, 2014) to drive performance and the sustainability agenda. Some of these trends include ecological quality, social justice, economic performance and prosperity, aging populations, increasing urbanisation, commercialisation of consumption, scarcity of resources and so on. Although business leaders are inclined to accomplish tasks through projects, PPM is still some way from becoming a mainstream business process, especially in organisations managing multiple projects. The criteria for selection and management of projects remain business-centric and focused on maximising business benefits and resource management. Although these outcomes are essential, PPM by its flexible and strategic focus, can deliver far more elaborate outcomes, which will form part of the proposed conceptual framework in this paper. Some of this limited view has been reflected in the models and frameworks that academics and researchers have developed for sustainable projects by integrating the principles of sustainability into project management. It must be said that these models are limited in function and do not justify the possibilities that can be harnessed through PPM.

This research paper comprises five sections with an extensive literature review following the introduction. The third section looks at the approaches and methods used in this research followed by the conceptual framework. Section four covers the results analysis of this research and finally the conclusion, recommendations and limitations of this research will form the fifth section.

2 LITERATURE REVIEW

2.1 Project Portfolio Management (PPM)

Portfolio management is a coordinated collection of strategic processes and decisions that together enable the most effective balance of organisational change (Patanakul, 2015) and business as usual (BAU). Achieving long-term benefits as well as developing maturity in processes and practices is key to the success of an organisation. Such cannot be achieved through tactical or piecemeal practices but as well-organised projects. Businesses that manage multiple projects should have coherent and manageable goals, measurable objectives, cross-functional measurement systems, realistic expectations and a clear appreciation of consequences rather than a project charter document (Bible and Bivins, 2011; Perry, 2011a). Greer, (2015) characterises PPM as a management process that helps to evaluate, sort and prioritise all projects according to certain criteria including strategic value, cost and resource constraints. Organisations that emphasise the use of tools and standards to accomplish tasks, usually focus on 'getting things done', which is a more functional approach of project management rather than deliberating and determining what 'should be done', a key characteristic of PPM. Fuller and Green, (2005) have asserted that any goal or objective is worthless if its outcome cannot be measured. PPM is intrinsic to a strategy that should adapt to accommodate the improbabilities and transformation of an operational environment. This strategically embedded nature of PPM addresses the long-term direction of an organisation, scope of activities, gaining an advantage over the competition, changes in the business environment, build on resources, competencies and capacity and stakeholder expectations.

APM Portfolio Management SIG, (2019) defines project portfolio management as the selection and management of all projects, programmes and associated business as usual events of an organisation taking into account constraints such as resource availability, affordability, customer impact and the organisation's ability to manage and accept the change. This view has been partially contended by Perry, (2011) who considers that not all projects should form part of the PPM except those that are part of the portfolio management 'governance process'. Perry, therefore, excludes pet or mandatory projects from PPM. It can, however, be argued that PPM that excludes some projects is limited in its overall functionality. Greer, (2015) does however consider the inclusion of all projects in the portfolio. Moore, (2010) holds the view innovative projects should not be grouped with incremental/ maintenance/ improvement projects as it leads to mismanagement of the portfolio.

It is generally agreed that PPM evaluates, coordinates and controls multiple projects that are pursuing the same strategic goals from the same pool of resources (Cooper et al., 1997; Kodukula, 2006; Kornfeld and Kara, 2011). PPM connects strategy and projects to keep organisations relevant and competitive in their marketplace (Martinsuo and Lehtonen, 2007; Killen, Hunt and Kleinschmidt, 2008; Moustafaev, 2017b). The proposed conceptual framework integrates the principles of sustainability and aims to look beyond the traditional view of PPM. This paper proposes that all projects should be included in a portfolio so that their contribution to the organisational strategy is evaluated for lessons learned, sustainability reporting and the development of best practices.

Moustafaev, (2017a) has put forward a framework to achieve a well-defined and structured management process for the evaluation, prioritisation, selection and elimination of projects. The framework focuses on three key elements. (1) Projects selected for the portfolio should maximise value for the organisation (2) The portfolio should be optimised (Moustafaev, 2017b) with strategic objectives and (3) The portfolio of projects must be strategically aligned (Moustafaev, 2017b) with the organisational objectives. Another model proposed by Bible and Bivins, (2011) recognise PPM as an "iterative sequential" process and closely follow Moustafaev's theme of the three pillars with a different process sequence.

The authors propose that a comprehensive framework that includes continuous and evolving improvements, transparency and accountability integral to the PPM process. It advocates extensive documentation, maintaining a repository for knowledge management and the active involvement of a centre of excellence. This can help determine the long-term outcomes and benefits of projects, draw and apply lessons learned, improve processes and develop best practices. Although complementary, sustainability does, however, add some degree of complexity into PPM practices which will require continuous examination and evaluation well after a project has been completed. This extended functionality of PPM will make it incumbent on portfolio managers and relevant stakeholders to be knowledgeable and prepare for additional responsibilities.

For this research paper and the conceptual framework, Sustainable PPM is defined as "Sustainable project portfolio management is a process for selection and management of all projects of an organisation to maximise value, constitute an optimised portfolio, alignment with the organisation's strategic and sustainability objectives and offers transparency and accountability with sustainable deliverables."

2.2. Project Management Versus Project Portfolio Management

A basic distinction between project management and PPM lies in their purpose. Projects deliver the task whereas PPM is the strategic vehicle that delivers organisational objectives of the work through projects (Morris and Jamieson, 2005). Projects have well-defined start and end dates whereas the latter exists well before projects are initiated and continues well after projects have been completed and benefits have been realised. Projects are aimed to produce a product, service or innovation successfully, are functional and represent a change in an organisation. PPM ensures the successful delivery of organisational strategy through projects. Project success is measured against three elements, i.e., time, scope and quality, also known as the 'iron triangle (Martinsuo and Lehtonen, 2007). The ambit of project management remains narrow and, therefore, functional or tactical.

The Association of Project Management emphasises that if tactical projects do not contribute towards the strategic goals they should not be carried out (APM Portfolio Management SIG, 2019). A bad strategy undertaken perfectly will still be a failure. Moore, (2010) goes on further to state that strategic goals should be defined before project selection, however, this process should not be rushed and fully endorsed by the organisation's senior executives.

Contents of a project portfolio, i.e., projects may change, but the purpose does not. Artto et al. (2008) also elucidate how the conditions around projects constantly change. Projects cannot respond to these changes as they have a narrow remit and cannot react effectively without the intervention of PPM. PPM is not linear but an iterative and sequential cycle that looks at the strategic aspects of the products, services or innovations within the parameters of the organisational goals and objectives. There may be many projects outside the portfolio, unranked, non-prioritised with no resources. PPM periodically evaluates, prioritises, ranks, commits and

allocates resources to projects and brings them into the portfolio. Projects that no longer remain relevant or become unaligned to the organisational strategy are postponed or even terminated from the portfolio. In another scenario, organisations undergo a state of 'strategic drift' where strategies fail and the organisational performance deteriorates, project management will fail to bring in the necessary intervention (Johnson, Scholes and Whittington, 2006) and solutions. PPM on the other hand is designed to provide the requisite responses under such a situation. As more organisations become predisposed towards carrying out activities through projects, the assumption that individual projects are simple to accomplish due to ease of management and control is overshadowed by the absence of strategy, transparency and value when examined through the lens of PPM (Elonen and Artto, 2003).

2.3 Sustainability

Sustainability is loosely understood to be many things. An array of definitions exist, mainly attributed to the position and perception of the user (Van Calker et al., 2005), is multi-dimensional, can be understood as a 'metaphor, meaning and a paradigm' (Cadenasso and Pickett, 2018). This can invite skepticism due to its vagueness (Sze, 2018). Ambiguity could lead to the concept of sustainability becoming meaningless (Silvius, 2017), conversely, Robinson, (2004) coined the phrase 'constructive ambiguity', which makes the concept flexible with diverse meanings and, therefore, attracting a wide range of actions and possibilities. The Brundtland report of the World Commission on Environment and Development (WCED) adopted a definition that is accepted and used extensively in research. The premise of the definition is based on the understanding that environment and development are inseparable and political and economic development decisions made by countries have a profound effect on the future of sustainable human development (Brundtland, 1987). It states, "… meeting the needs of the present generation without compromising the ability of future generations to meet their own needs".

Ehrenfeld, (2008) looks at Rene Descartes' moral philosophy, which underlines liberal political economy propagating that more choice is good for human beings. In practice, this leads to consumption, even addictive consumption and depletion of resources which is the predominant cause for unsustainability. Ehrenfeld further stresses that the effort to diminish unsustainability, although important, does not create or produce sustainability. Sustainability is not the opposite of unsustainability. The significance of this concept should be borne in mind by practitioners and business managers in the practical application of sustainability in the processes of PPM.

Managers must have a reasonable level of knowledge and comprehension of the true essence of sustainability so that its application in projects helps realisation of benefits, both short and long term and to appreciate outcomes of existing processes for future projects. Knowledge management should be a key activity to make use of the active and unifying multi-faceted learning methods for developing sustainability skills relevant to real-world challenges and opportunities (Paun, 2018). Corporate social responsibility (CSR) or corporate sustainability (CS) are becoming integral to an organisations activities and project, programme and portfolio practitioners should be able to provide direct input into them as well as participate in the reporting side of CSR and CS. Practitioners should be able to gain a deeper understanding of the processes but also apply this knowledge in future project scenarios.

2.3.1 Triple Bottom Line (TBL)

Following the Brundtland Report, (1987), the most generally accepted framework for sustainability was stipulated by Elkington, (1997) based on the 3Ps, people, profit and planet and covers three main aspects of environmental quality, economic prosperity and social justice, now commonly known as the Triple Bottom Line or TBL. TBL aims to bring awareness to organisations of the environmental impacts, social issues and how economic value can be added or diminished by the activities that they perform. An all-inclusive application of sustainability requires the integration of economic, environmental and social perspectives (Padin et al., 2016). The significance of integration of the three aspects of sustainability also means redefining organisational objectives, which generally focus on profits for shareholders to create value for stakeholders.

Another noteworthy relationship exists between TBL and the stakeholder theory (Hubbard, 2009; Freeman and Dmytriyev, 2017). The Stakeholder Theory examines an organisation's performance against the interests of those stakeholders who have interests that influence the organisation's undertakings (Hubbard, 2009). TBL goes beyond the transactional relationships with stakeholders and determines project performance vis a vis other stakeholders, including local communities, governments, employees, suppliers and customers. Eskerod, Huemann and Ringhofer, (2015) observe that existing tools for project stakeholder management are often project-centric and therefore, less appropriate for stakeholder participation.

2.3.2 Corporate Social Responsibility (CSR) and reporting principles

Corporate social responsibility has different connotations for different companies e.g., donations to charities, corporate citizenship, strategic philanthropy. That being said, CSR is not a measure of how an organisation spends towards sustainable activities but how they make a profit. It must also be pointed out that activities undertaken by an organisation that does not bring systemic change cannot be considered CSR (Hubbard, 2009). The term sustainable development gained prominence following the WCED Report (Brundtland, 1987; Sze, 2018). Although sustainable development is considered a 'societal concept' it has been widely adopted as a corporate concept, therefore, "corporate sustainability" (Steurer et al., 2005). While there is no universal definition for corporate sustainability, Clément Roca and Searcy, (2012) have characterised it as "adopting business strategies and activities that meet the needs of the enterprise and its stakeholders today while protecting, sustaining and enhancing human and natural resources that will be needed in the future".

Organisations with corporate sustainability integrated into their processes report their activities to exhibit how they operate as responsible organisations to their stakeholders. PPM assists in maintaining sustainable development by linking the projects and their investment lifecycle with collaboration and integrative thinking from stakeholders. Lessons can be drawn and learned from reports of completed activities thus improving upon existing processes or develops new ones, building more meaningful key performance indicators and other means for measuring organisational activities including projects and business as usual.

Different standards have been initiated by organisations to regulate the reporting of sustainability. Examples of these standards include the UN Global Compact, the Organisation of Economic Cooperation and Development (OECD) Guidelines for Multinational Enterprise, the Global Reporting Initiative (GRI), Dow Jones Sustainability Index (DJSI) to name a few. For this paper and the PPM conceptual framework, we will consider the GRI framework. The GRI standard was initiated in 1997 as a collaborative project between the US Coalition for Environmentally Responsible Economics and the UN Environment Programme (Vigneau, Humphreys and Moon, 2015). When discussing the conceptual framework, GRI standards have been used not only for CSR reporting but the selection of criteria to screen projects. It is important to note here that this provides consistency throughout the process making knowledge management and post-project assessments simpler to administer. This then contributes to the centre of excellence (COE) and can be augmented into the process and organisational maturity models for projects, for example, the Capacity Maturity Model (CMM), Organisational Project Management Model (OPM3) or Office for Government Commerce – Prince 2 Maturity Model (OGC-P2MM).

2.4 Project Portfolio Management and Sustainability

To emphasise the association between sustainability and PPM it should be noted that sustainability is often regarded as 'the right thing to do' (Padin et al., 2016) as does PPM. Project management differs fundamentally in that it relates to processes and practices and is referred to as 'doing things right'. This elementary but essential association of sustainability and PPM demonstrates the broader and strategic relationship distinct from that of project management. Furthermore, sustainability and PPM are not an endpoint or a state of a system but rather a process or a path relative to recognized goals (Childers et al., 2014). Gray, (2010) recognises that sustainability is 'non-ergodic' and therefore, lacks a defined end state. This interesting notion, therefore, leads to two significant inferences specifically regarding PPM. Firstly, sustainability like PPM should be evaluated and applied as a strategic concept and secondly, to realise ongoing benefits for projects-to-come, appraisal of sustainability should be an integral part of the

PPM process during and post-project lifecycle. Due to the absence of frameworks supporting the integration of sustainability and PPM, it would be safe to assume that practitioners of PPM lack the requisite level of knowledge in the area of sustainability in relation to PPM.

3 APPROACH

The research has been based on the premise that sustainability and PPM are representative of strategic processes and fundamentally distinct from project management which is functional and tactical and is constrained by time, scope and quality. Existing research has focused its models and frameworks on incorporating sustainability and PPM into either strategy, projects or project management which results in limited improvements to the process and the deliverables. The methodology employed in this research is qualitative and descriptive with the following rationale:

- To conduct a methodical and extensive literature review that has been exploratory as well as analytical to ascertain gaps in the existing research. These gaps have been further explored to determine an alternative method to make the projects more sustainable.
- Existing frameworks have been analysed and their limitations have been researched.
- Data collection has, therefore, been from secondary sources and the research strategy has been exploratory and descriptive.
- This proposed framework extends in functionality to incorporate some additional business processes and requirements including, multi-criteria decision-making models (MCDM), frameworks and standards for measuring project progress.
- Figures and diagrams depicted are for explanation and illustrative purposes only and do not signify a real-life case study.
- The research is based on pragmatism, combining qualitative and quantitative data. The authors have relied on common sense explained with rationale, extending the functionality of existing models and incorporating them in a different configuration.

4 THE PPM CONCEPTUAL FRAMEWORK

This paper proposes a PPM conceptual framework taking into consideration many factors. Principles of sustainability should be an integral part of the project/ PPM lifecycle. Selection of the factors for evaluating projects include not only the strategic but sustainability (environmental, social and economic) attributes or the TBL. The framework ensures that the integration of sustainability into the PPM process does not impact the integrity of the project lifecycle. Projects are evaluated, prioritised and selected using techniques as ascribed by previous researchers with the inclusion of sustainability in line with the organisational strategy and overall objectives. Resources are allocated to projects that meet the requirements of sustainability. The need for transparency and accountability is integral and implementable for practitioners when drawing lessons from completed projects and preparing reports for CSR. To improve sustainability reporting practices it is assumed that: projects within a portfolio have been assessed, selected, prioritised using sustainability-centric practices; projects are implemented as sustainable projects; and that practitioners use sustainability reporting standards that are recognised globally and support CSR. To ensure that the conceptual framework can be integrated into PPM with the least disruption to existing pipeline projects and incorporating knowledge management and the Centre of Excellence (COE) into PPM. The PPM conceptual framework is shown in **Figure 1**.

4.1 Phase 1. Strategic

In this phase, the senior executives of an organisation lay out the organisations' vision, mission and an approved strategic plan which must include the organisation's strategic and sustainability objectives. The intended outcome of the strategic phase is to draw a set of prioritised organisational objectives.

The strategic phase should achieve the following intended outcomes:

- An approved strategic plan with well-stated and prioritised goals and objectives.
- The goals and objectives should be measurable over time. The proposed conceptual framework links up with measuring standards.
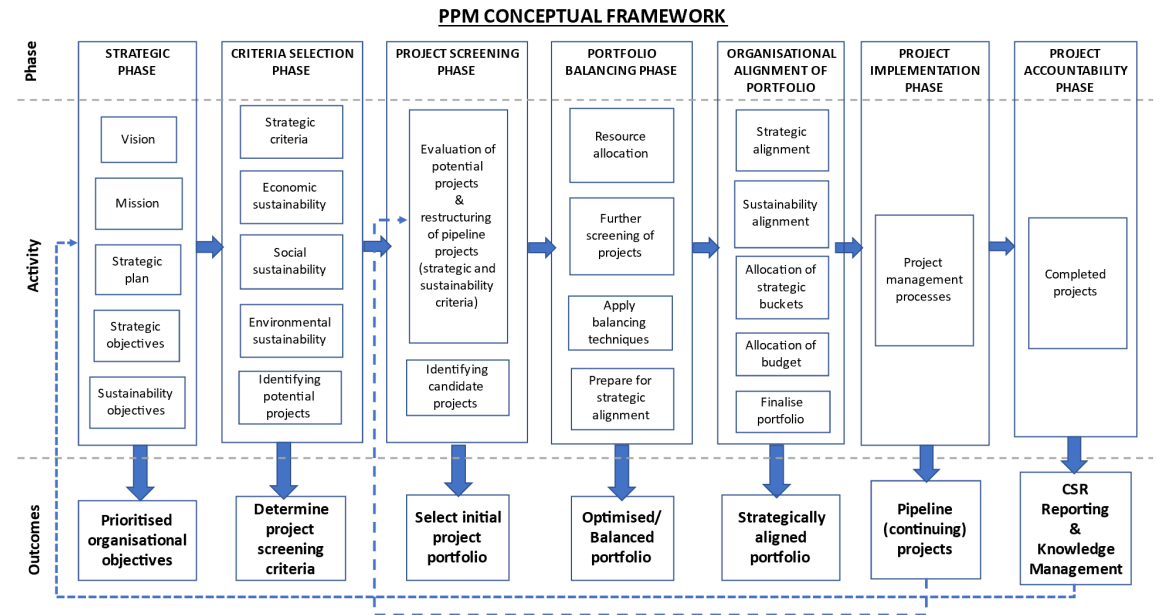

Figure 1: PPM Conceptual Framework Overview

4.2 Phase 2. Criteria selection

This stage aims to generate variables/ criteria which will become the basis for screening candidate projects. The process (in **Figure 2**) is collaborative and requires the involvement of key stakeholders who will examine the criteria relevant to the organisations strategic and sustainability performance objectives. Silvius, (2017) recommends sustainability indicators incorporated in the business case of projects requires a multi-criteria approach in the business case evaluation. Participants in this process must clearly understand the difference between strategic criteria and sustainability criteria and the intended outcomes. Strategic criteria is that which is considered important while assessing the value of their future projects, whereas sustainability criteria relate to how projects will contribute towards economic, environmental and social (TBL) situations as well as gain value through sustainability.
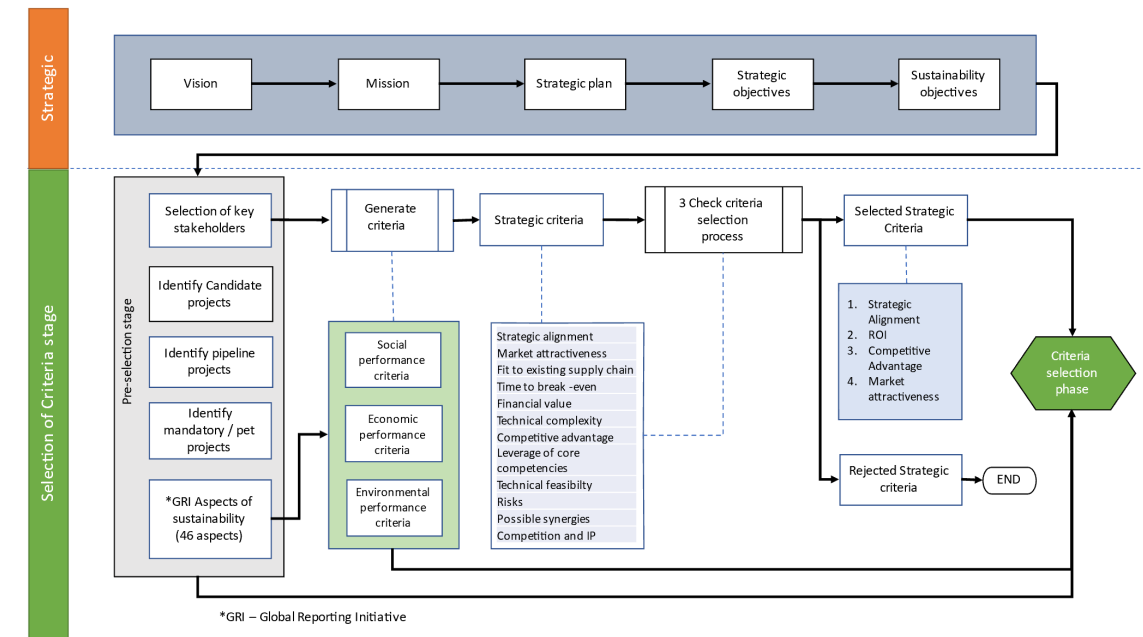

Figure 2: Process flow for selection of criteria

The rationale for selection of criteria:

- Projects should be selected to maximise benefits for the organisation, are aligned to the overall strategy and the principles of sustainability.
- Criteria selected should be representative of the life-cycle of the product or service and not only for the project life-cycle. This is so that project outcomes can be measured.
- The selection of criteria is a collaborative process that makes stakeholder expectations realistic.

Step 1. Identifying the participating key stakeholders

The 'key stakeholders' will be referred to as 'participants' in this paper. The facilitator, usually the portfolio manager (Moustafaev, 2017b) of this process will carefully qualify and select the participants in consonance with the senior executives of the organisation. The theory for the criteria selection process is presented by the facilitator.

Step 2. The process of selection of strategic criteria is as follows:

Sub-step 1. Participants will brainstorm and generate a list of relevant variables/ criteria. The criteria should address the organisational objectives and the intended purpose that potential projects.

Sub-step 2. The scoring model methodology used by Moustafaev, (2017c), also known as the checkmark method is suggested for generating the strategic criteria. The outcome of this exercise is a list of attributes that have been weighed up by the participants of this process.

Sub-step 3. Participants of the process should brainstorm and give due consideration to the following important factors in the selection of sustainability attributes.

- a. The selected list of attributes should be aligned with the sustainability objectives of the organisation.
- b. The projects selected through this assessment process would ensure they conform to the principles of sustainability.
- c. In the interest of transparency and accountability, the main indicators which will constitute CSR reporting of the organisation will be based on sustainability attributes selected from the GRI framework. As approved projects will already have been assessed and vetted using sustainability attributes, practitioners of PPM will have greater clarity and ease in preparing CSR reports.

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The strategic phase should achieve the following intended outcomes:

- An approved strategic plan with well-stated and prioritised goals and objectives.
- The goals and objectives should be measurable over time. The proposed conceptual framework links up with measuring standards.

Step 3. The process of selection of sustainability criteria is as follows:

Step 1. The participants, in a brainstorming session, list down any number of GRI 'aspects' (for a high-level assessment) or 'indicators' (for a more granular assessment of projects) (Global Reporting Initiative, 2020), which may be considered appropriate for screening projects and are also consistent with the sustainability goals and objectives of the organisation (as defined in the strategic phase).
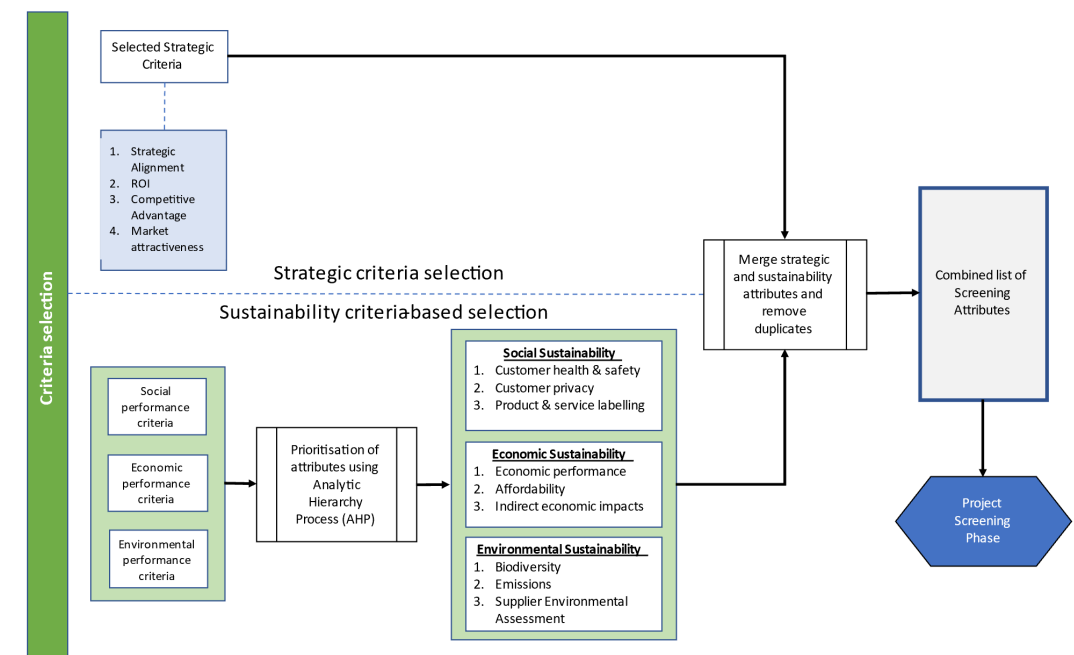
Step 2. In this step, the participants may use any multi-criteria decision-making method (MCDM), e.g., the Analytic Hierarchy Process (AHP), that allows for pairwise comparison of variables thus establishing the relative importance of one variable against another. The process is repeated for the three categories of sustainability i.e., economic, environmental and social.

Step 4. Combining the strategic and sustainability criteria

For ease of understanding the process, we assume that all strategic criteria from the checkmark process have been selected and the top three in order of importance from each of the sustainability categories, i.e., economic, environmental and social have been selected.

The participants compare both lists for any direct or transitive links and remove duplicates to prepare a final list which forms the template of evaluating and screening potential projects. Another factor that should be considered by participants when finalising the criteria list is that excessively restrictive criteria may lead to exclusion of promising projects which should form part of the portfolio (Bible and Bivins, 2011).

Figure 3: Process for Selection of criteria

Step 5. Identifying potential projects

Projects that have been proposed will be identified at this stage. Some of the project categories which will be assessed by participants in this PPM framework (Bible and Bivins, 2011) may include mandatory or operating necessity projects, pet projects, competitive necessity projects, new product or service development projects, product line extension/ incremental product and service enhancement projects, research and development projects, true innovation projects and cost reduction projects. Pipeline projects are excluded from this phase which will be automatically included in the project screening and prioritisation phase during the periodic assessment of the PPM cycle.

4.3 Phase 3. Project screening and prioritisation

To screen projects there must be a measurable or quantifiable rationale for each of the strategic and sustainability criteria. The outcome of this phase is to select an initial project portfolio using the combined (sustainability and strategic) selected criteria. Potential projects will become candidate projects in this phase. Previously, postponed or deferred projects which required restructuring or modifications will be brought back in this phase to be screened. Pipeline projects will also be evaluated in this phase for periodic assessments to ensure they remain aligned to the overall organisational objectives. Moustafaev, (2017c) has suggested a scoring model which will be used to demonstrate this phase of the process. The process is depicted in the flowchart **figure 4**.

Step 1. Defining the decision criteria

Describe each criterion that will become the guiding principles for awarding points to each project. This is to ensure that all participants understand the criteria clearly and do not have any nuanced or different interpretations. A quantifiable rationale for scoring should also be developed.
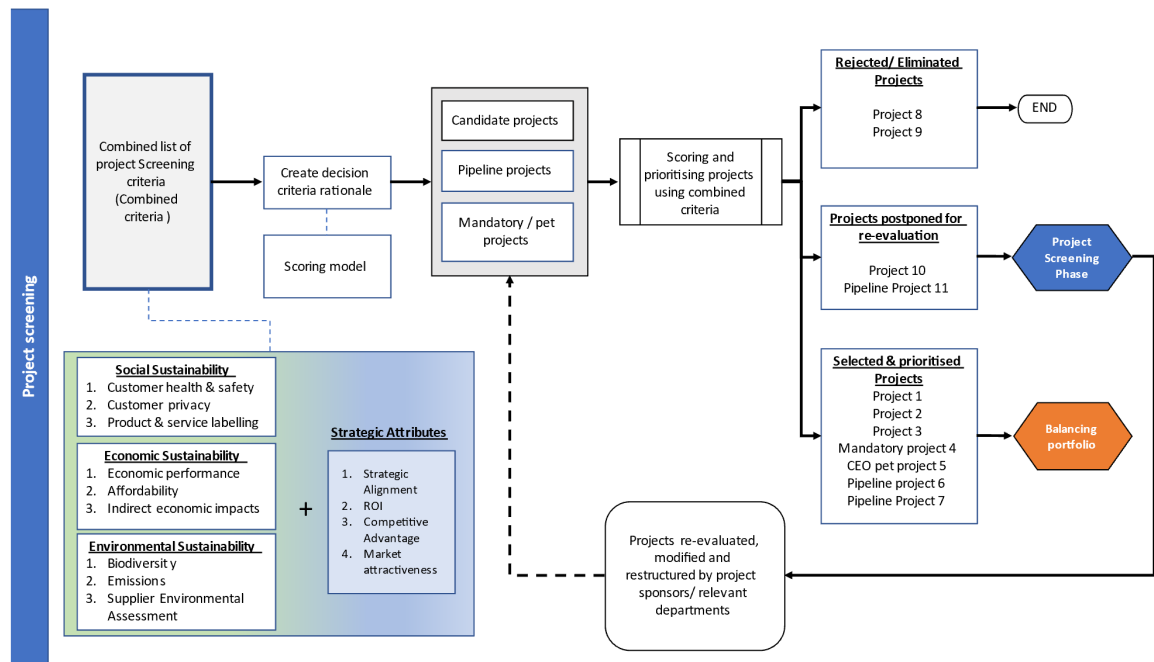
Step 2. Scoring and prioritising projects

Scoring is awarded by the participants to each project based on its importance relative to the criteria. The scores are aggregated, based on which projects can be ranked or prioritised.

Step 3. An initial prioritised portfolio of candidate projects is now available for further evaluation in the next phase of the process where the portfolio will be optimised/ balanced. As discussed previously, the criteria should not be over-restrictive and result in potentially promising projects being removed from the process. Other likely outcomes of this phase are:

- Projects that do not fit the criteria may be eliminated and communicated to the project sponsors or project champions.
- Some projects may require reconfiguration and may be postponed for re-evaluation in the next periodic phase of project screening and prioritisation. For clarity of comprehension, projects brought back for re-evaluation will not be termed pipeline projects and these will not require to be pre-screened as new prospective projects. Reasons for the deferment of projects will be conveyed to relevant stakeholders.

- Pipeline projects which are no longer aligned to the overall organisational objectives may either be deferred or eliminated from the process so that resources may be reallocated to other projects or as the situation may determine. It may be noted that periodic examination of projects is a key function of PPM, which ensures that pipeline projects are fit for purpose.
- Mandatory or pet projects also get screened in this process and although they may pass through to the next phase, they provide valuable insights for the management on their alignment to the organisational objectives and for CSR reporting.

4.4 Phase 4 Balancing the portfolio

Selected projects which fulfill the criteria will form the initial portfolio. This initial portfolio should now be evaluated so that it delivers maximum benefits to the organisation by taking into view the resource constraints (Bible and Bivins, 2011). This phase ensures that the organisation does not have a few good projects and many small or irrelevant projects or large and low-risk projects which do not create growth and high returns for the organisation.
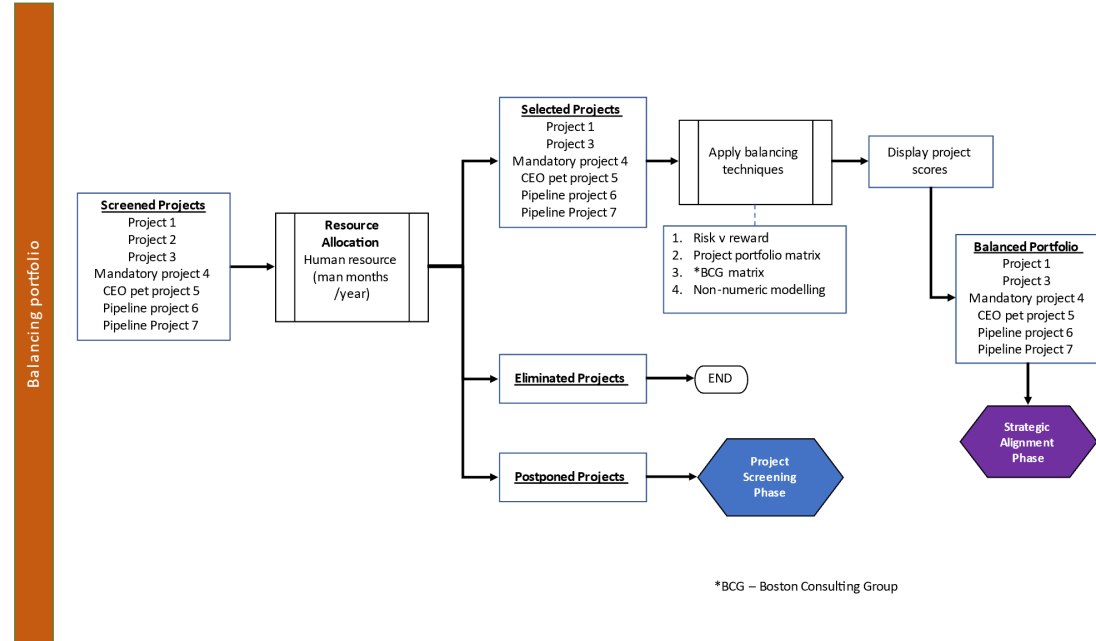
In this phase, projects are assessed for resource allocation and balancing techniques are applied to get better visibility of the maximisation of benefits of projects within the portfolio. This can assist with understanding where different projects are placed in the portfolio from a performance point of view and subsequently, actions could be taken to either improve the positioning of projects in the overall mix or consider postponement or removal from the portfolio. A simple method of resource allocation can be made by evaluating the number of estimated man-months required for the completion of each project in order of priority.

Organisations may choose from several methods to determine the balance of the portfolio, e.g., Risk versus Reward method, the Project portfolio matrix method (Matheson, Matheson and Matheson, 1998), Boston Consulting Group (BCG) matrix, and the non-numeric model.

4.5 Phase 5 Strategic Alignment

Moustafaev's (2017c) process for strategic alignment in the three pillars framework for PPM proposes to place projects into strategic buckets (breakthrough, enhancement and maintenance projects) and allocating financial resources.

Figure 4: Project screening and prioritisation

Figure 5. Balancing the portfolio

However, these alone do not serve a more holistic approach to the PPM process and leads the user of this proposed conceptual framework to the issue, i.e., how do principles of sustainability (which have been integrated into the selection process) transform or impact the portfolio. Sustainability has a meaningful influence on the way projects are viewed as it addresses the purposeful desire of most organisations to become more competitive, remain relevant and appear socially, economically and environmentally responsible and the deliverable are sustainable. The conceptual framework, therefore, suggests a process that extends beyond selection, management and the bucket classification of projects to make the PPM process more comprehensive. It connects with CSR reporting to build more transparency, accountability and to construct efficiencies for existing and future projects.

Structure, according to Chandler, (1962) has two aspects. One, the lines of communication and management between different administrative or business units and secondly, the information and data that flow through these lines of communication and authority. This, therefore, means that structure is not only about the formal distribution of roles or a planned network but also what happens within this network

(Hall and Saias, 1980). For this paper, Chandler's definition of structure will be adopted to interpret and understand the need for structural alignment and changes which an organisation must embrace to have sustainable projects. Chandler also stipulates that, "Unless structure follows strategy, inefficiencies result". One of the key functions of the PPM process is creating and delivering efficiencies. We may, therefore, assume that organisations that build a strategy that encompasses strategic as well as sustainability principles, should also be prepared to respond to the need for change in processes and structure to be more aligned strategically as well as to the principles of sustainability.

4.6 Phases 6 and 7. Project implementation and accountability

The project implementation phase, as depicted in **Figure 7**, deals with project management and the project lifecycle. Two necessary aspects of the implementation phase should be mentioned here. Firstly, projects that are complete will be assessed in the accountability phase for lessons learned, and reporting purposes, described in more detail in this section. Secondly, projects which are still in the pipeline will be re-evaluated for progress and alignment with

organisational objectives, balancing the portfolio and resource constraints. Such projects will be put through the project screening phase of the PPM process of this conceptual framework which falls periodically for all pipeline projects and proposed projects. Normal work on pipeline projects should continue until such time that the stakeholders reconsider their place in the portfolio. For the proposed PPM conceptual framework, the implementation phase is beyond its scope as it does not contribute anything new towards the process and will not be discussed any further.

Outline of steps in this phase:

- Completed projects are assessed for sustainable performance using sustainability performance measuring standards. This paper proposes the use of GRI (Global Reporting Initiative) for CSR reporting.
- CSR reports are prepared
- Project performance is documented and corroborated with the centre of excellence (COE)
- Lessons learned are shared with the PPM team, relevant stakeholders, business leaders for consideration in the strategic phase, i.e., the first phase of the process.

4 RESULTS

Putting the conceptual framework through the paces in real-life situations will bring out the true analysis of its functionality and efficacy. Existing frameworks do not sufficiently or effectively cater for sustainability. The tools for implementation of projects are functional, tactical and short-term in their approach even though they interplay with strategic factors and recognise that products and services delivered through project management processes have a long term impact not only on the organisation which develops the deliverables but the environment, and society in general. Furthermore, applying sustainability factors at the project management level will result in tactical gains whereas portfolio management will bear strategic benefits. Additionally, there is limited understanding of creating sustainability with organisations mainly focusing on reducing unsustainable practices in their project processes leading to reductionism.

It has been highlighted in previous research that practitioners do not understand the mechanisms for the application of sustainability into projects. The result is that sustainability has either been left to the strategy builders at the top of an organisation or to those involved with reporting mechanisms.

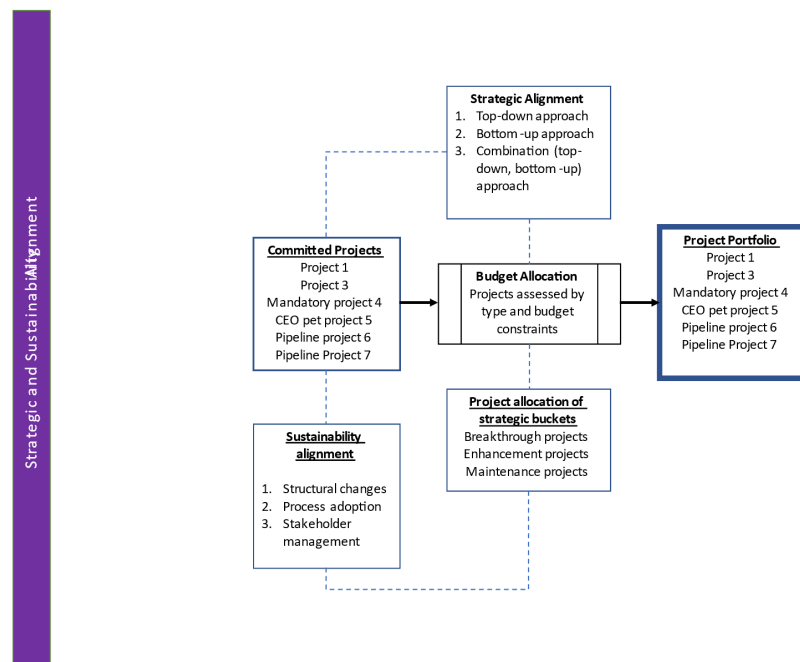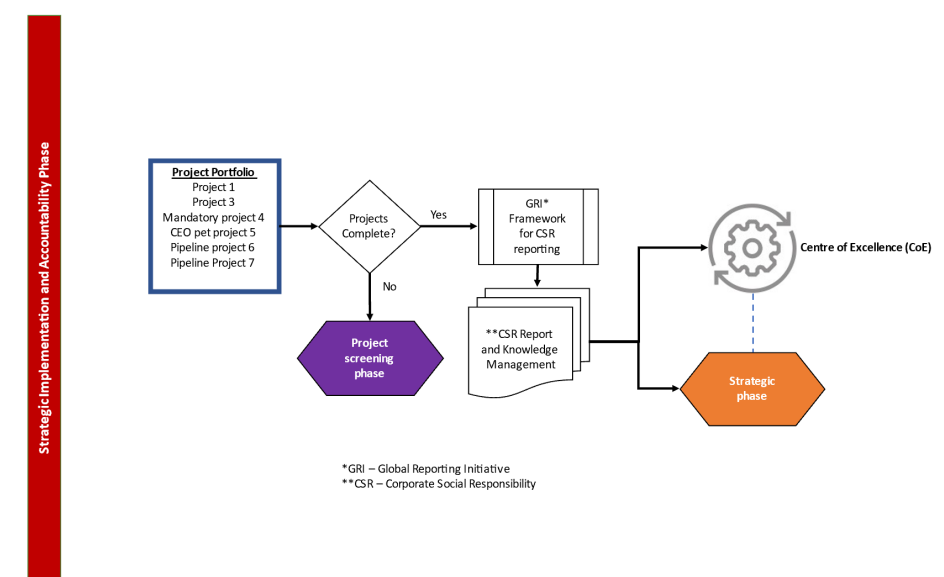Figure 6: Strategic and Sustainability Alignment

Figure 7. PPM Flowchart - Accountability phase

A sustainable strategy is not only difficult to translate in terms of project implementation but also in terms of obtaining meaningful sustainable outcomes. Silvius, (2017) draws attention to the fact that projects are temporary in nature and sustainability should be part of the product or deliverable, contrary to Labuschagne, Brent and Van Erck, (2005) who stipulate that projects and their deliverables are interrelated. Integration of sustainability into PPM should be the answer to both as it leads to both sustainable projects as well as deliverables.

The conceptual framework proposed in this research demonstrates the following:

- A framework or tool can be devised that allows the merger of the principles of sustainability into the project PPM, which caters to strategic as well as sustainability paradigms in a nuanced manner without radical changes to existing processes.
- The conceptual framework takes benefit of the strategic and flexible nature of both PPM and sustainability.
- The conceptual framework has a sustainable footprint from the beginning to the end, i.e., processes of selection, optimisation and strategic alignment of the process can be done with criteria based on sustainability tenets.
- That the processes of selection, optimisation and strategic alignment do not justify the strategic outcomes of PPM and transparency and accountability should be integral to the PPM processes.
- PPM should be a cyclical process that is iterative sequential rather than an iterative sequential process only.
- CSR reporting should be integral to the PPM knowledge management process.
- Sustainable projects are a source of competitive advantage for an organisation that undertake projects as a means of accomplishing tasks.
- The conceptual framework addresses the gap in the social dimension of sustainability through bridging the project selection process to CSR and by engaging stakeholders.
- The proposed conceptual framework allows for stakeholder collaboration and participation throughout

- the process, which is key to the success of PPM. It further establishes stakeholder buy-in as well as an understanding of the project outcomes.
- Key outcomes of the conceptual framework are maximisation of benefits for the organisation, strategic alignment, a balanced portfolio, sustainable projects and transparency and accountability.

5 CONCLUSION

Efforts have been evolving to bring sustainability into the project environment. Organisations recognise the importance of accomplishing tasks through projects. This is probably best understood by the increasing demand for project managers in the business world. The conundrum has been how to make projects sustainable through existing processes. This research has, therefore, looked at the key concepts of project management, PPM and sustainability and how they can be related to each other. The literature review highlights the gaps in research and the lack of a model where sustainability has been integrated into PPM. Previous research has taken the view that if the organisational strategy is based on sustainability, projects and the deliverables should be sustainable too. The other view is that sustainability should be incorporated into projects without addressing a corresponding strategy. Other research has led to industry-relevant sustainable processes. It is quite evident that a model which can be applied across all industries requires development.

The conceptual framework proposed in this research attempts to create a model which has the flexibility to be applied across diverse industries and can be tailored according to the business requirements. It encompasses stakeholder participation imbuing better understanding and managing their expectations and buy-in to the projects. The proposed conceptual framework provides a strategic approach that is in harmony with sustainability and other methodologies. It further expands on the role of PPM to include processes that bring about transparency and accountability of processes and projects. Learning lessons become more methodical and is consistent with knowledge management and utilisation of the centre of excellence.

There are, however, limitations to the proposed conceptual framework. These provide opportunities for further research.

The model does not validate how sustainability can be quantifiable about organisational objectives. The model has not been tested in a real-life scenario, which should help determine areas that require improvements and develop case studies for future use. PPM and sustainability are based on the Stakeholder Theory and this research has provided sparse information in this area. Stakeholder engagement and contributions to PPM are vital for its success. The research lightly touches on best practices. In order to maximise the potential benefits of sustainable development of PPM, it would be recommended if process maturity models like OPM3 (Organisational Project Management Maturity Model), CMM (Capability Maturity Model), CMMI (Capability Maturity Model Integration), OGC-P2MM (Office of Government Commerce – PRINCE2 Maturity Model) and other similar models include sustainability elements to standardise sustainable process maturity methods.

Furthermore, the concept of the circular economy should be studied in light of sustainable PPM. This research has chosen GRI (Global Reporting Initiative) to select projects and sustainability reporting. It is recommended that other reporting tools should be applied to the proposed framework for a much wider understanding of these processes. Another area that requires research is whether sustainability is built into the framework bottom-up or top-down in the process and which method would be more effective. Finally, the proposal is open to contributions from the research, academic and practitioner community and should be viewed as an initial step towards developing a tried and tested framework that addresses some of the difficulties that organisations face when implementing sustainability into their project-related processes.

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