



POLITECNICO DI TORINO

Master of Science in Engineering and Management

INTEGRATING SUSTAINABILITY INTO AN ORGANIZATION: A PROJECT, PROGRAM, AND PORTFOLIO MANAGEMENT APPROACH

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Abstract

In today's fast-paced world characterized by technological development, digitalization, and rapidly evolving social and economic conditions, environmental, social, and governance problems have become the drivers for organizations to change their way of doing business. Climate change, population increase, diversity and inclusion awareness as well as changing consumers expectations are only a few of the main drivers of the necessity of an organizational change toward environmental, social, and economic sustainability.

Although most companies state full commitment to sustainability in their mission and strategy statement, a gap exists between strategy and benefits realization. This thesis attempts to synthesize knowledge produced about the integration of sustainability within an organization's strategy as well as operations and daily activities and proposes a project, program, and portfolio management framework to this end. The goal is to embed sustainability aspects in every phase of project management and program and portfolio management. The thesis also includes a change management plan proposal aimed at the full integration of sustainability into an organization.

Keywords: Sustainability, Project, Program, Portfolio Management, Change Management

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1. INTRODUCTION

In today's fast-paced world, technological innovation, proliferation of data and rapidly evolving social and economic conditions are disrupting and reshaping every aspect of society, including the business environment. The introduction of innovative applications, the rise of major economic markets, and the disruptions of entire industries have created remarkable opportunities for companies and organizations. The rapid changes that have characterized the past few decades have increased the pressure on companies to focus on achieving results in the short term. But there is another side of the coin. The warning signs about climate change are getting stronger: tremendous global warming, natural disasters and environment-related health problems are just a few of the most alarming issues that are characterizing our present. Although governmental regulations and policies are crucial to fight the ongoing climate crisis, businesses can play a crucial role in this war and may be the driving force of the needed change. Most businesses worldwide are assessing their performance based on their short-term profitability that does not cover all the aspects of value that have become extremely important in businesses. Apart from financial benefits, the value that an organization can create involves the intangible aspects, such as innovation, culture, and corporate governance, and it's crucial that businesses focus not only on the short-term but also the long-term consequences of their products and services. The development of governmental regulatory announcements, international collaboration to reduce carbon emissions, changing attitudes in the C-suite, and rising consumer awareness are increasing the pace of sustainability change.

Today, sustainability is a largely discussed topic and the need for a change in the world is a well-known concept. Organizations play an important role in this change as their impact can be significant. While most companies show their

commitment to sustainability in their mission statement and values, there is a mismatch between the sustainability goals, the business goals and the ongoing operations. This thesis proposes a journey whose purpose is to embed sustainability culture within an organization with particular emphasis on its portfolio of programs and projects and aims at providing an ideal framework that companies should use in order to fully integrate sustainability within their business and the change management process needed to achieve this ideal state. The approach and the methodologies used consists of the project portfolio management techniques, and the perspective of this thesis encompasses a portfolio, program, and project level view.

1.1 PURPOSE AND STRUCTURE OF THE THESIS

Although much research and literature has been developed regarding the introduction of sustainability into companies as well as into project, program, and portfolio management, there is not a standard project management framework that provides guidance to the full integration of sustainability through project management. This thesis attempts to create an initial framework to be adapted for different firms. Even though a one-fits-all approach is not possible, this thesis provides the guidelines to become a sustainable organization through project, program, and portfolio management and illustrates the change management process necessary to achieve the transformation.

Chapter 1 introduces the overview of the thesis and outlines the environmental, social and economic problem drivers that pressure companies to take action. Chapter 2 explores the meaning of sustainability in the business context and related to project, program, and portfolio management. Chapter 3 explains different aspects of project portfolio management along with its role between strategy and operations and the current state of many organizations. Chapter 4 describes the ideal state in which sustainability is fully integrated into a company and provides a framework for portfolio management along with new practices to sustainably manage projects. The change management process is addressed in Chapter 5: becoming a sustainable organization requires a readiness

assessment, a full engagement of employees and executive management, and a change management plan. Finally, the last chapter presents the conclusions, limitations and future research.

1.2 RESEARCH METHODOLOGY

The thesis uses explorative research, drawing from peer-reviewed articles, books, and papers that analyze the role, causes, effects, and implementation of sustainability into organizations. The research includes specialized consulting companies' and credible cited articles, case studies, and analysis. The thesis aims at synthesizing the findings of many articles into a single framework, as a foundation for empirical research; the research does not include implementation. The methodology employed in this research is qualitative and descriptive. Existing frameworks have been analyzed and integrated with new insights. The research is based on pragmatism, combining qualitative and quantitative data. The author has relied on common sense, extending the knowledge of existing models and incorporating them with additional information. Figures and diagrams presented in this thesis are illustrative and do not signify a real-life case study. Implementation research is advised to be carried out as further development, as this thesis is intended to provide a conceptual starting point for further empirical studies.

1.3 PROBLEM DRIVERS

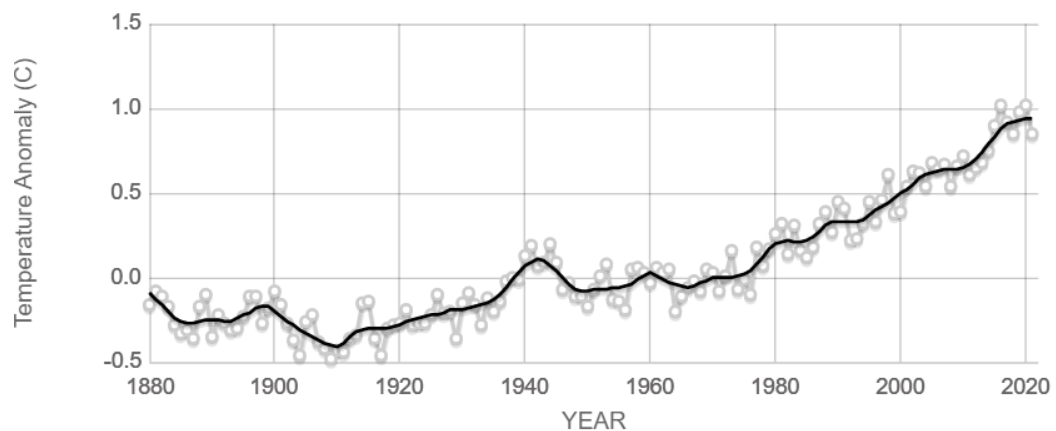
1.3.1 Environmental Drivers

Environmental drivers are mainly related to climate change and all the environmental implications that come together with it: more frequent and intense drought, storms, heat waves, sea levels and melting glaciers. The Intergovernmental Panel on Climate Change (IPCC) was jointly formed by the United Nations Environment Programme (UNEP) and the World Meteorological

Organization (WMO) in 1988 with the purpose of advancing knowledge on human-induced climate change. IPCC's Synthesis Report of 2014 confirms that human influence on the climate system is growing, with clear impacts observed across all continents and oceans. The IPCC is 95 percent certain that humans' activities are the main cause of current global warming. The most critical issues related to climate change are the role of greenhouse gas emissions (GHG), and the severity of potential risks and impacts, especially for the least developed countries. The majority of all human activities is responsible for carbon dioxide concentrations in our atmosphere. According to the United States Environmental Protection Agency (EPA, 2022), the primary sources of greenhouse gas emissions are transportations (27 percent of 2020 greenhouse gas emissions), which include cars, ships, trucks, trains and planes, and electricity production (25 percent of 2020 greenhouse gas emissions), mostly coal and natural gas burning.

The evidence for rapid climate change is clear. According to IPCC's Sixth Assessment report, published in 2021, planet's average surface has risen about 2 degrees Fahrenheit since the late 19th century due to human emissions; temperature has increased by 0.14° Fahrenheit per decade since 1880, but the rate of warming since 1981 is more than twice this: about 0.32° Fahrenheit per decade (Lindsey & Dahlman, 2022).

As shown in Figure 1.1, 2021 has been the sixth - warmest year, while the time span from 2013 to 2021 ranked among the ten warmest years on record. The graph shows the change in global surface temperature compared to the long-term average from 1951 to 1980 (NASA/GISS, 2021).



Source: climate.nasa.gov

Figure 1.1. Global Land-Ocean Temperature Index. Source: NASA's Goddard Institute for Space Studies (GISS), 2021.

Extreme weather events are becoming more and more frequent and destroy lands and human activities while damaging the entire population; devastating wildfires in Australia, California and Southern Europe, heatwaves in India and Pakistan, typhoons and hurricanes in Asia were caused by harmful human activities. The ocean is getting warmer and warmer and sea levels are constantly rising due to melting of mountain glaciers and mass losses from the Greenland and Antarctic ice sheets. In particular, the Antarctic Ice Sheet is in decline and from 2020 the speed of ice loss has multiplied sixfold over thirty years; research based on observations from the Gravity Recovery and Climate Experiment (GRACE) satellites indicates that about 150 gigatons of ice per year are lost in Antarctica, causing global sea level to rise by 0.4 millimeters per year (NASA, 2021). Glaciers are retreating almost everywhere around the world, including in the Alps, Himalayas, Andes, Rockies, Alaska, and Africa (NASA, 2022). Satellite observations also revealed that the amount of spring snow cover in the Northern Hemisphere has decrease over the past five decades and the snow is melting earlier (NASA, 2022). The increase of temperature and the ice melting are phenomena that advance the so-called positive feedback loop, that further drives climate change. As temperature increase causes polar ice melting, the highly reflective ice and snow surface decrease and the darker surface (water or land) is exposed and can absorb solar radiation rather than reflect it back to space (Sousounis, 2019). The absorption of heat energy at the Earth's surface further warms the atmosphere, which causes more ice and snow melt in an increasingly rapid cycle. The evaporation of melted ice and the moisture in the atmosphere from higher temperatures contribute to the warming process since water vapor is a greenhouse gas. This loop therefore amplifies global warming and ice loss and can bring to irreversible disasters.

Finally, ocean acidification has increased by about 30 percent since the beginning of the Industrial Revolution due to human emissions of carbon dioxide into the atmosphere and therefore the ocean.

To tackle climate change and its negative impacts, in 2015, the Paris Agreement was established at the UN Climate Change Conference (COP21) in order to set long-term goals (The United Nations, 2021). Today, 194 parties (193 States plus the European Union) are committed to reduce global greenhouse gas

emissions to limit the global temperature increase, review countries' commitments every five years, and provide financing to developing countries to strengthen resilience and enhance abilities to adapt to climate impacts (The United Nations, 2021). Every five years, each country has to submit a long-term action plan, known as Nationally Determined Contribution (NDC). The UN's Conference of the Parties (COP) number 27 has ended in November 2022 in Sharm el-Sheikh, Egypt and one of its outputs is the so-called Compendium of Climate-Related Initiatives. The Compendium includes 128 projects with a budget of 128 billion dollars (Maltzman & Shirley, 2022) and provides the basis for a project pipeline with projects focused on NDC and regional priorities.

1.3.2 Social Drivers

According to World Bank (2022), 56 percent of the world's population lives in the cities, accounting for nearly 4.5 billion inhabitants; however, these numbers are expected to grow significantly in the near future, where 7 out of 10 people in the world will live in the urban area. Despite all the advantages connected to higher urban agglomerations, mostly associated with a positive increase in income, labor productivity as well as innovation and digitalization, it is worth mentioning that this cultural shift may embody some drawbacks. As a matter of fact, poor air and water quality, high energy consumption and emissions are becoming critical issues in recent years; cities consume almost two thirds of global energy consumption, being also responsible for 70 percent of greenhouse gas emissions (UNFCCC, 2020). Moreover, according to Maltzman and Shirley (2010), the increase of population will mainly impact underdeveloped countries, which are not able to sustain this growth, making it necessary to carry out sustainable projects to provide basic needs.

Among demographic trends, it is worth mentioning some of the most recent social issues which are spreading all over our society: human rights, labor and decent working conditions and gender equality. The International Labor Organization (ILO) defines decent work as "productive work for women and men in conditions of freedom, equity, security and human dignity" (ILO, 2022). As states by the European Commission (2022), work is considered decent when it

pays a fair income, it guarantees a secure form of employment and safe working conditions, it ensures equal opportunities and treatment for all, it includes social protection for the workers and their families, it offers prospects for personal development and encourages social integration, and workers are free to express their concerns and to organize. Nowadays, companies are increasingly recognizing their legal and moral responsibility to guarantee labor standards and women's empowerment.

1.3.3 Economic and Governance Drivers

In the last few years, the European Union has brought some changes to its regulatory framework; in 2020, a sustainable corporate governance initiative has been introduced to enable organizations to focus on long-term sustainable value creation rather than short-term benefit. Moreover, to achieve sustainable solutions, the Paris agreement was adopted by 196 Parties to undertake efforts to combat climate change; in particular, from 2024, countries will have to report transparently on actions and measures taken toward climate changes. Looking at worldwide scale, the Kyoto protocol was signed to commit industrialized countries to limit and eventually reduce greenhouse gasses emissions. The UN Climate Change conference, held in Glasgow in 2021, addressed all facets of climate change by identifying major areas of improvement; in particular, over 40 countries pledged to phase out coal use by 2030, while public and private funds were allocated against world deforestation (The United Nations, 2022). Over 30 countries and several vehicle manufacturers set out their commitment to zero-emission vehicles by 2040 accelerating decarbonization of road transport; in addition, central banks and private financial institutions announced financial plans of about trillion of dollars to achieve global net zero emissions.

Another reason why integrating sustainability into a company has become fundamental is the fact that in the last several decades, the focus on business value has increased and changed significantly. While during most of the previous century the value of an organization was determined to a large extent by its tangible assets, today companies capture most of the value through intangible assets such as intellectual property and innovation. Stakeholders have changed the

way they look at business value, that now is mostly represented by human capital, organizational culture, customer loyalty, and trust. Furthermore, consumers are adopting different ways to shop and live sustainably. A survey conducted by Deloitte in 2020 demonstrates the most prominent lifestyle changes: as shown in Figure 1.2, more than two-thirds of respondents are cutting down on single-use plastics, 43 percent choose brands that have environmentally sustainable values, and 38 percent is trying to reduce the number of new products and goods bought. Sustainability is a key consideration for a variety of consumers when it comes to making a purchase decision and is shaping its influence on the global consumption. As consumers are steadily drifting away from unsustainable products and likely to drop brands who don't meet their eco-preferences, it's crucial that companies integrate sustainability within their day-to-day activities.

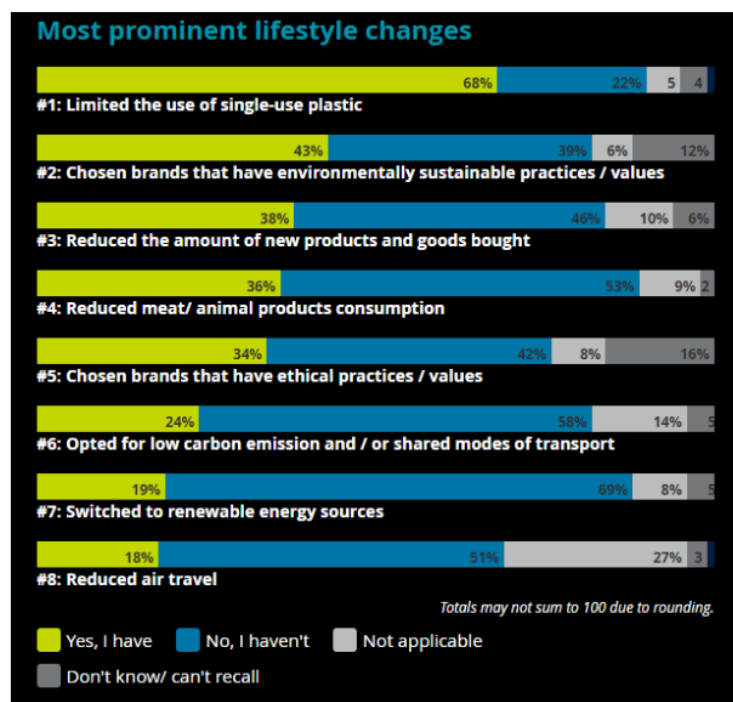


Figure 1.2. Most prominent lifestyle changes. Source: Szegedi, 2020.

2. SUSTAINABILITY AND SUCCESS

2.1 SUSTAINABILITY: MEANING AND BUSINESS CONTEXT

Sustainability has become a crucial concept in global public and political discussions in recent years everywhere in the world. While everyone knows what it is about in broader terms, a unique and universally accepted definition is hard to find. Christian U. Becker (2011) attempts to explain sustainability with three main concepts: continuance, orientation, and relationships. Literally, the term sustainability means the ability to keep going, to maintain and it allows for two interpretations: the ability of a system, entity, or process to maintain itself, or the ability of humans to maintain a certain system, entity, or process (Becker, 2011, 9). Furthermore, today, sustainability is widely used as a norm, as something positive for which everyone should strive, as a major aim and an orientation of long-term human actions. Even though the normative aspect of sustainability may be controversial, a comprehensive and appropriate academic approach to sustainability issues requires consideration of the idea and meaning of sustainability as a whole, and discussion of the possibilities to include the normative and evaluative aspects of sustainability into an overall academic approach. Relationships are also crucial for the modern meaning of sustainability. In 1987, the United Nations Brundtland Commission defined sustainability as “meeting the needs of the present without compromising the ability of future generations to meet their own needs” (The United Nations, 1987). From this statement, two fundamental relationships emerge: the relationship between humans and their contemporaries - meaning, between different individuals and groups within the present generation - and, secondly, the relationship between the present generations and the future generations (Becker, 2011, 12). Indirectly, the definition refers to the human-nature relation, since both mentioned human

relationships are heavily influenced by environmental actions. As a matter of fact, nature plays a fundamental role: biology, genetics, and ecology analyze biological mechanisms that define the human relationship with nature. Becker (2011) summarizes his discussion by providing the following definition of sustainability: it is “the ability to establish continuance as a means for orientating human actions and life toward the threefold relatedness of human existence to contemporaries, future generations, and nature”.

Sustainable development involves environmental, economic, and social aspects. Figure 2.1 depicts the interrelation between the three dimensions: sustainability is represented as the synergy between social, economic, and environmental elements, a concept that is also known as Triple Bottom Line (TBL).

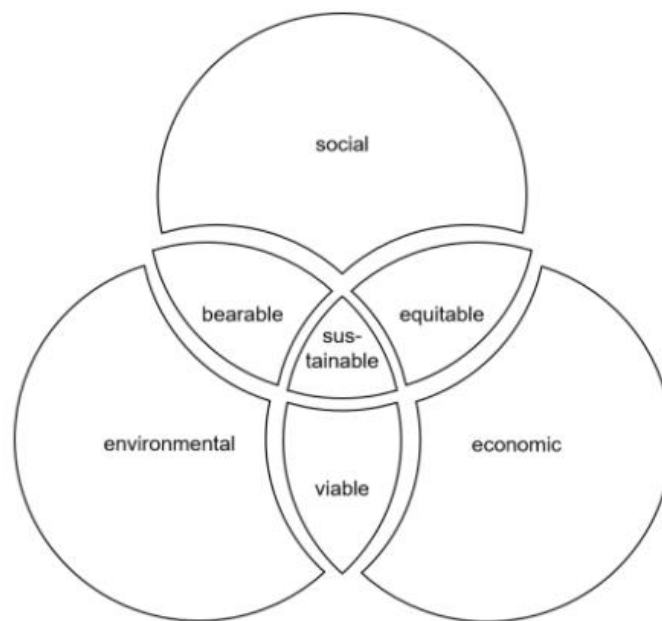


Figure 2.1. Interrelation of the dimensions of sustainability.

For a particular process to be sustainable, it should not cause irreversible change to the environment, should be economically viable, and should benefit society now and in the longer term. In the business context, these three dimensions are often called ‘People, Planet, Profit’, or PPP, since this concept implies that a company should take its decisions with consideration of people - its employees as well as other stakeholders and society as a whole -, the planet - that

is the environment - and the profit. While companies are organized with a strong orientation towards the economic perspective, the environmental and social aspects are often less embedded in organizations' strategies and practices. The three pillars are explained in detail in the following paragraphs.

- **Environmental Pillar.** It consists of protecting the natural environment, such as land, air, water, minerals. Environmentally sustainable initiatives and programs ensure that the needs of the population are met without the risk of compromising the needs of future generations. It includes an organization's areas of impact on natural capital and the planet's biodiversity. Today, the world is experiencing unprecedented rapid warming from human activities, primarily due to burning fossil fuels that generate greenhouse gas emissions (The United Nations, 2022). According to GHG Protocol corporate standard (2004), a company's greenhouse gas emissions are classified into three scopes. Scope 1 emissions are direct emissions from company-owned and controlled resources (Bernoville, 2022). Scope 2 emissions are indirect emissions from the generation of purchased energy from a utility provider, meaning the emissions released in the atmosphere from the consumptions of purchased electricity, steam, heat and cooling (Bernoville, 2022). Finally, Scope 3 emissions are all indirect emissions that occur in the value chain of the firm, including both upstream and downstream emissions. Figure 2.2 provides an overview of GHG scopes and emissions across the value chain.

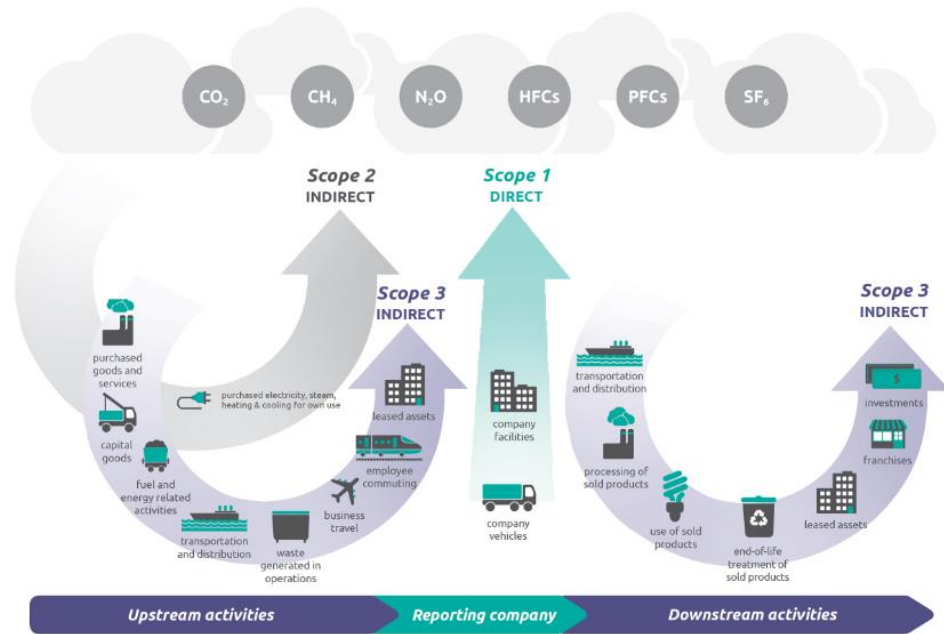


Figure 2.2. Scope 1, 2, and 3 emissions. Source: WRI/WBCSD, 2004.

Greenhouse gas concentrations are at their highest levels in 2 million years and continue to rise; the Earth is about 1.1° C warmer than it was in the 1800s (The United Nations, 2022). The consequences of climate change include, among others, intense droughts, water scarcity, severe fires, rising sea levels, flooding, melting glaciers, catastrophic storms, and declining biodiversity. An organization is environmentally sustainable if its processes, systems, and activities reduce the environmental impact of its facilities, products, and operations.

- **Social Pillar.** Social sustainability aims at preserving the social capital by investing and creating services that constitute the framework for our society. It focuses on maintaining and improving social quality with concepts, such as cohesion, inclusion, diversity, and the importance of relationships amongst people. It also encompasses improving human rights and social equality and preserving future generations.
- **Economic Pillar.** It involves creating economic value out of the decisions made as well as compliance, proper governance, and risk management. Economic sustainability is used to define strategies that promote utilization of socio-economic resources to their best advantage. A sustainable

business model proposes an equitable distribution and efficient allocation of resources, providing long-term benefits and establishing profitability. The economic value focuses on the creation of economic impact, serving underserved markets, developing new sustainable solutions and new partnerships.

The Triple Bottom Line can be associated with the ESG – standing for Environmental, Social and Governance - framework that allows organizations to manage risks and opportunities around the sustainability issues and the concept of Corporate Social Responsibility (CSR). The latter is the idea that a company should focus on both financial and non-financial factors when making business decisions. Several standards are available for various types of CSR initiatives. A comprehensive call to action that companies can refer to is identified by the 17 Sustainable Development Goals (SDGs) designed by the United Nations in 2015 with the purpose of ending poverty, protecting the planet, and ensuring well-being among communities by 2030 (Dimovska, n.d.). The 17 SDGs - shown in Figure 2.3 - are integrated ensuring that the development must balance social, economic, and environmental sustainability. Chapter 4.2.7 will go into more details about how to quantify and measure the most influential SDGs into a company.



Figure 2.3. Sustainable Development Goals. Source: The United Nations.

2.2 SUSTAINABILITY IN PROJECTS AND PROJECT MANAGEMENT

The concerns about sustainability indicate that the current way of producing, organizing, consuming, and living may, or will, have negative effects on the future. Projects can be seen as instruments of change to realize sustainable change in companies (Silvius et al., 2012, 29). Although the defining characteristics of projects do not match the important aspects of sustainability, projects may actually play a fundamental role to implement change management through project management methodologies into organizations that want to - and should - switch towards a sustainable business. As Silvius et al. (2012) underline in their book “Sustainability in Project Management”, there are some *natural* differences between the concepts of project and sustainability, and they are summarized in the following Figure 2.4.

Sustainable Development	Project Management
Long-term + short-term oriented	Short-term oriented
In the interest of this generation and future generations	In the interest of Sponsor/Stakeholders
Life cycle oriented	Deliverable/result oriented
People, Planet, Profit	Scope, Time, Budget
Increasing complexity	Reduced complexity

Figure 2.4. The contrast between the concepts of sustainable development and projects. Source: Silvius et al., 2012, 30.

Although the temporary nature of projects is not logically compatible with the concepts of sustainable development, projects can have a dual role when it comes to contributing to sustainability. As a matter of fact, the relation between sustainable development and projects can be related to the definition of the *product or deliverable* of the project, but also it is important to mention the *process or delivery* of the project. Huemann & Silvius (2017) define in their article the two perspectives *Sustainability by the project* and *Sustainability of the project* respectively. What *Sustainability by the project* concerns, following the

reasoning that projects are instruments to realize an organizational change, a growing number of publications highlight the role of projects in the sustainable development of companies and society. Project in its essence means plan and includes as temporary organization the element of change: a project allows to plan and ‘project’ the future and brings change to a company or a society (Huemann & Silvius, 2017). Projects as vehicles for change therefore play a crucial role in the sustainable development of society and organizations. The Triple Bottom Line concept (sustainability as balance between economic, social, and environmental interests) in project management implies including environmental and social criteria to the economic ones in the selection of the projects, the evaluation of the business case, the identification and design of the deliverables, the recognition of stakeholders, the benefits achieved, quality and success criteria as well as the assessment of the risks.

Sustainability of the project focuses on the way projects are designed, planned, executed, managed and governed, and based on this meaning, Silvius and Schipper (2014) define Sustainable Project Management (SPM) as “the planning, monitoring and controlling of project delivery and support processes, with consideration of the environmental, economic and social aspects of the life-cycle of the project’s resources, processes, deliverables and effects, aimed at realizing benefits for stakeholders, and performed in a transparent, fair and ethical way that includes proactive stakeholder participation.”. The deliverable of a project is also shaped by the delivery process and the process, and the deliverable interact. Including sustainability in project management means therefore considering not only the project life cycle, but also the life cycle of the deliverable of the project, the artifacts this asset makes as well as the long-term strategy that contributed to the choice of the project. Chapter 4.5 identifies new project management tools and practices embedding sustainability.

Little attention is paid to linking higher level company and operational project objectives when selecting projects (Torres-Lima et al., 2020, 10). Project sustainability is considered as a central criterion for long-term success (Torres-Lima et al., 2020, 10). Transparency is crucial: making connections, synergies and potential risks visible facilitates the selection of sustainable projects. The single projects and project programs in the project portfolio should be aligned with the

company's targets (Torres-Lima et al., 2020, 12). To achieve sustainable project selection, it is important to comply with crucial requirements: planning from rough to detailed results in a hierarchy of objectives, promoting portfolio transparency in order to systematically plan and control the project landscape, compliance with project heterogeneity and sustainability (Torres-Lima et al., 2020, 14). A sustainable project portfolio specifically includes the features of 'portfolio balancing' and 'strategic fit', which are vital. The whole incorporation of sustainability within a company's project portfolio, and in turn the company's strategy, is often difficult to achieve. To close this gap, a target system is necessary to identify the objectives at high level - company -, and lower levels - project portfolio, project program, and project. Each objective identified needs to be further operationalized so that sub-objectives and KPIs identify specific measures to be assessed. Chapter 4.4 provides a framework in which selection criteria, project selection, portfolio balancing, and management are integrated with the principles of sustainability.

2.3 SUSTAINABILITY AT THE ORGANIZATIONAL LEVEL: STRATEGY AND PROJECT PORTFOLIO MANAGEMENT

Strategies for integrating sustainability involve appointing corporate sustainability officers, publishing sustainability reports and incorporating sustainability into their corporate communication strategies (Silvius et al., 2012, 10). Companies should not merely focus on their financial bottom line, but also, they should take into consideration social equity and environmental protection. Project portfolio management is the managerial activity which relates to the initial screening, selection and prioritization of project proposals, the concurrent reprioritization of projects in the portfolio, and the allocation and reallocation of resources to the projects according to priority. Project portfolio management is the link between organizational strategy and goals and the actions that lead and ensure the organizational focus, in terms of programs and projects (Silvius & Marnewick,

2021). Since projects are the instruments to implement a company's strategy, project portfolio management aligns the portfolio components - projects and programs - and the organizational values. In order to integrate sustainability at the organizational level, it's crucial to take into account the governance of individual projects, the way organizational change skills will develop and the management of the project portfolio. Chapter 4 further develops the concepts of integrating sustainability into a company's strategy and at a portfolio level.

2.4 SUSTAINABILITY AND SUCCESS

In most organizations, sustainability is stated as a pillar in a company's mission statement, but it is not translated into the daily activities of operations. This gap is a consequence of the potential misinterpretation of the meaning of success, as suggested by Maltzman and Shirley (2016). The mere project management success refers to the successful meeting of deadlines, staying under budget, and accomplishing deliverables. Project success, instead, focuses on the long-term benefit realization of the project's product or service. The latter vision is a more holistic view compared to the former one, as it considers the social, environmental, and economic aspects after the completion of the project itself as well. While finishing a project's deliverables on time and within budget is important, it's crucial to look at the projects' outcomes in the longer term, considering the Triple Bottom Line aspects.

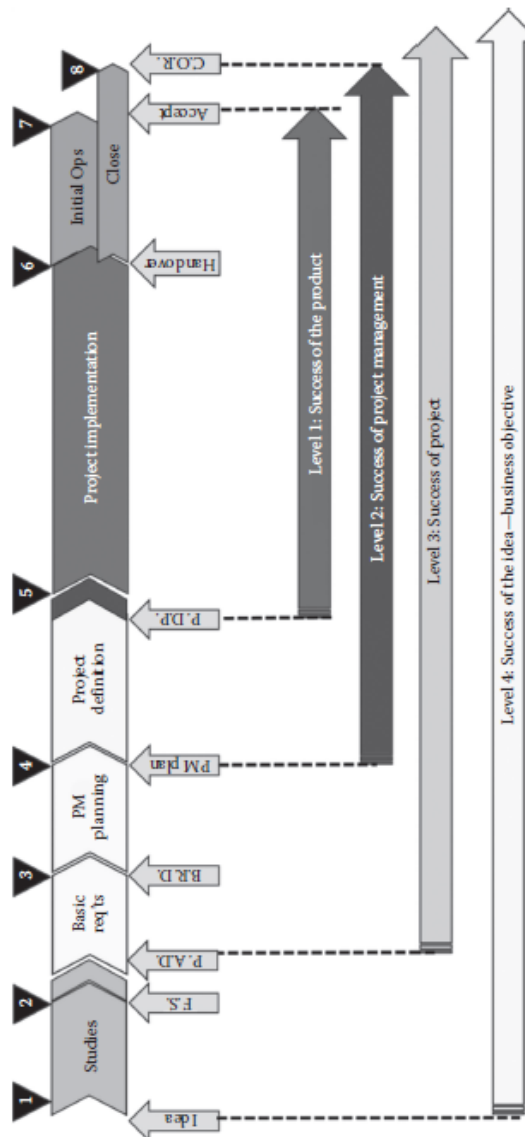


Figure 2.5. Varying views of success - SUKAD model. Source: Maltzman & Shirley, 2016, 19.

Figure 2.5 shows the different perspectives of success outlined by Maltzman and Shirley (2016) using the SUKAD (Success, Unique, Knowledge, Attitude, Development) model. It's clear that the success of the holistic idea takes into consideration a longer-term view, even after the implementation of the project. And this should be the goal when selecting a project. Complying with the schedule and the budget set at the beginning is as important as considering the long-term benefits and negative aspects of the project's result. The longer-term perspective enhances the sustainability mindset, that if applied at the Organizational Project Management level - meaning at the project, program, and

portfolio level – it facilitates the integration of the sustainable strategy. To remedy this ambiguity in interpretations, as reported in the article by Pinto & Ika (2022), the Organization for Economic Co-operation and Development (OECD) policymakers have identified the criteria to evaluate the success of projects. These criteria are the following:

- Relevance: Is the project doing the right thing?
- Efficiency: How well are resources being used?
- Effectiveness: Is the project achieving its objectives?
- Impact: What difference does the project make?
- Sustainability: Will the project benefits last?
- Coherence: How does the project fit with other projects?

Pinto and Ika (2022) discuss their vision of project success and argue that the existing literature about project success fails to take into account stakeholder views and attributions, issues of timing, and sustainability considerations all together. Success measurements should definitely reflect the strategic intent of the company and its business objectives and, due to the multidimensional nature of success, they should take into consideration four different aspects, avoiding simplistic models (Pinto & Ika, 2022, 6). Figure 2.6 shows the so-called Tesseract model proposed by Pinto and Ika (2022) where project plan success (efficiency and effectiveness), business case success (business and direct success), green efficacy (preparation for future) and stakeholder success (impact on customer, team) are interrelated and provide key dimensions of success that collectively contribute to the overall project success.

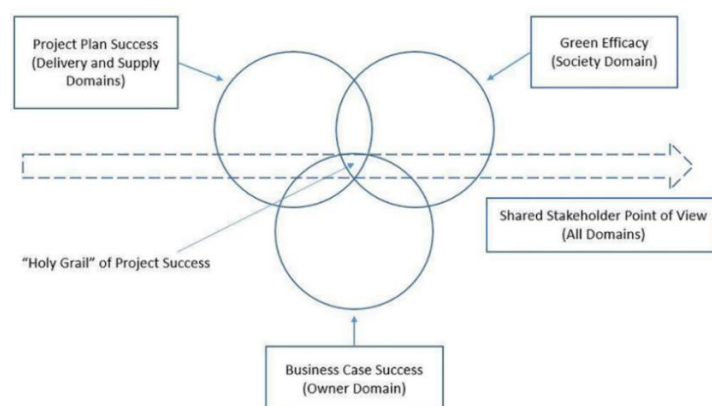


Figure 2.6. A four-dimensional (Tesseract) model of project success. Source: Pinto & Ika, 2022.

The delivery and supply domains are collectively responsible for project plan success. The owner domain is responsible for outcomes realization, and the society domain oversees the extent to which the project impacts the community, the society, and the environment. Different stakeholders - including the project founder, owner, manager, customer, supplier, team - may have different views about the project's success: it depends on who creates, who captures, and who destroys value and when. Linking the dimensions of project plan success, business case success, and green efficacy, it's possible to obtain eight different combinations for project success assessment, as shown in Figure 2.7.

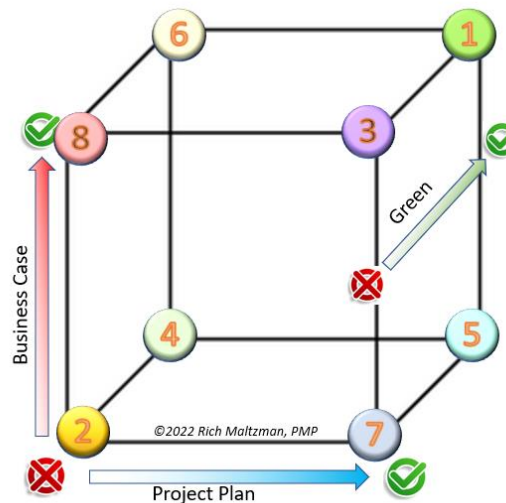


Figure 2.7. Project Success Assessment. Source: Richard Maltzman, 2022 (adapted from Pinto and Ika, 2022 with permission).

The most successful projects are the ones that come in on time and budget, deliver benefits and meet sustainability targets (number 1 in Figure 2.7). There are projects, instead, that are complete failures in terms of project plan, business case, and sustainability (number 2 in Figure 2.7): they result in cost overruns, time overruns, fail to deliver benefits and have negative sustainability impact. Number 3 in Figure 2.7 represents those projects that are project plan and business case successes but green failures, as these yield residual and long-term damage to the environment. On the contrary, there are projects that are both business case and project plan failures but green successes, as they cause a net positive sustainability impact (number 4 in Figure 2.7). Then, there are projects that are project plan and

green successes but business case failures (number 5 in Figure 2.7) and also project that are project plan failures but business case and green successes (number 6 in Figure 2.7). Finally, number 7 in Figure 2.7 refers to the projects that are project plan successes but business case and green failures and number 8 in Figure 2.7 represents the projects that are project plan and green failures but business case successes.

3. PROJECT PORTFOLIO MANAGEMENT AND CURRENT STATE

Organizational Project Management (OPM) is defined as “a strategy execution framework that utilizes portfolio, program, and project management as well as organizational-enabling practices to consistently and predictably deliver organizational strategy to produce better performance, better results, and a sustainable competitive advantage” (Project Management Institute, 2013). A project is defined as “a temporary endeavor undertaken to create a unique product, service or result” (Project Management Institute, 2021). A program is “a group of related projects, subprograms, and program activities managed in a coordinated way to obtain benefits not available from managing them separately” (Project Management Institute, 2021). A portfolio refers to “projects, programs, sub-portfolios, and operations managed as a group to achieve strategic objectives” (Project Management Institute, 2017, 3). The portfolio components are quantifiable, may be related or unrelated, may be independent or interdependent, and may have related or unrelated objectives. The purpose of a portfolio is to achieve organizational and business unit strategies and goals and organizations need to determine how best to optimize and balance the portfolio components. A portfolio reflects one or more organizational strategies and objectives; therefore, a portfolio represents an organization’s intent and direction, and must be aligned with the organizational strategy. Figure 3.1 shows the potential structure of a sample portfolio, that is usually structured as a hierarchy.

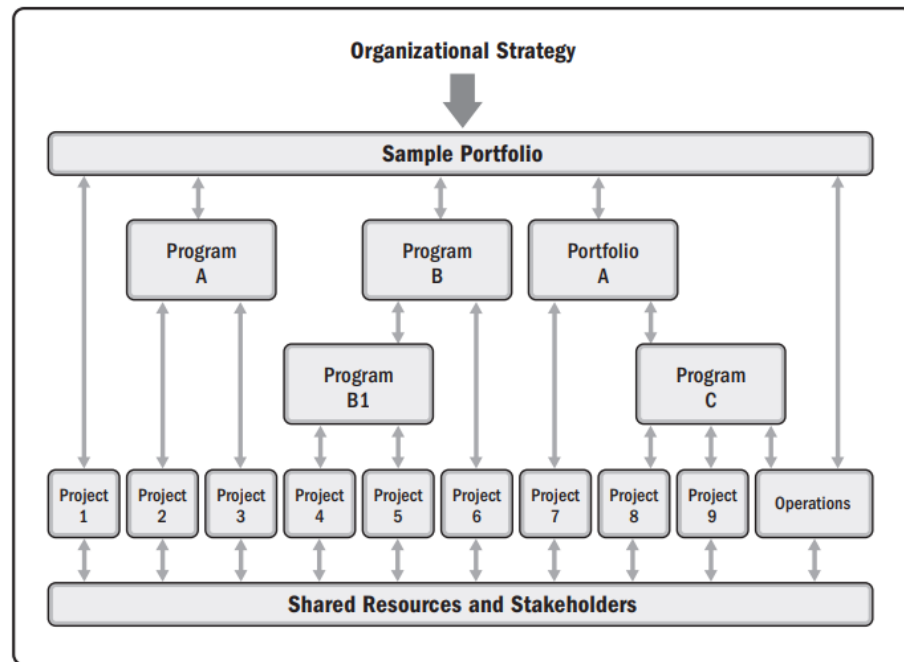


Figure 3.1. High-Level View of Portfolios, Programs, and Projects. Source: Project Management Institute, 2017, 4.

Although projects and programs may not be directly related to each other, they serve as a means to the organizational strategic plan through the portfolio. According to the Standard for Portfolio Management (2017), all portfolio components should have the following features:

- Representing how the organization will achieve its strategic goals and objectives through the portfolio and its components.
- Representing the organization's investment priorities to achieve its strategy.
- Requiring management and governance that includes allocating and sharing resources (human, financial, asset, and intellectual) across the portfolio.
- Having the ability to be quantifiable and, therefore, evaluated, measured, ranked, and prioritized.
- Having the ability to be directed or controlled to accomplish portfolio value.

Portfolio management, therefore, is the management of one or more portfolios to achieve strategic objectives: the main activities are identifying, categorizing, monitoring, evaluating, integrating, selecting, prioritizing, balancing, authorizing,

transitioning, controlling, and terminating portfolio components. Portfolio management allocates resources based on organizational priorities and capacity and integrates management principles and sound practices to deliver business value aligned with the strategic objectives. Figure 3.2 shows the differences between portfolio management, program management, and project management.

Organizational Project Management			
	Projects	Programs	Portfolios
Definition	A project is a temporary endeavor undertaken to create a unique product, service, or result.	A program is a group of related projects, subsidiary programs, and program activities that are managed in a coordinated manner to obtain benefits not available from managing them individually.	A portfolio is a collection of projects, programs, subsidiary portfolios, and operations managed as a group to achieve strategic objectives.
Scope	Projects have defined objectives. Scope is progressively elaborated throughout the project life cycle.	Programs have a scope that encompasses the scopes of its program components. Programs produce benefits to an organization by ensuring that the outputs and outcomes of program components are delivered in a coordinated and complementary manner.	Portfolios have an organizational scope that changes with the strategic objectives of the organization.
Change	Project managers expect change and implement processes to keep change managed and controlled.	Programs are managed in a manner that accepts and adapts to change as necessary to optimize the delivery of benefits as the program's components deliver outcomes and/or outputs.	Portfolio managers continuously monitor changes in the broader internal and external environments.
Planning	Project managers progressively elaborate high-level information into detailed plans throughout the project life cycle.	Programs are managed using high-level plans that track the interdependencies and progress of program components. Program plans are also used to guide planning at the component level.	Portfolio managers create and maintain necessary processes and communication relative to the aggregate portfolio.
Management	Project managers manage the project team to meet the project objectives.	Programs are managed by program managers who ensure that program benefits are delivered as expected, by coordinating the activities of a program's components.	Portfolio managers may manage or coordinate portfolio management staff, or program and project staff that may have reporting responsibilities into the aggregate portfolio.
Monitoring	Project managers monitor and control the work of producing the products, services, or results that the project was undertaken to produce.	Program managers monitor the progress of program components to ensure the overall goals, schedules, budget, and benefits of the program will be met.	Portfolio managers monitor strategic changes and aggregate resource allocation, performance results, and risk of the portfolio.
Success	Success is measured by product and project quality, timeliness, budget compliance, and degree of customer satisfaction.	A program's success is measured by the program's ability to deliver its intended benefits to an organization, and by the program's efficiency and effectiveness in delivering those benefits.	Success is measured in terms of the aggregate investment performance and benefit realization of the portfolio.

Figure 3.2. Comparative Overview of Portfolio, Program, and Project Management. Source: Project Management Institute, 2017, 6.

3.1 RELATIONSHIP AMONG PORTFOLIO MANAGEMENT, ORGANIZATIONAL STRATEGY, STRATEGIC BUSINESS EXECUTION, AND ORGANIZATIONAL PROJECT MANAGEMENT

The organizational strategy helps define specific goals and objectives for the organization and is composed of goals and policies that provide the overall direction and focus of the organization, and plans and actions to achieve those goals. Portfolio management is the vehicle through which change initiatives and strategic investments are undertaken to realize strategic goals and objectives (Project Management Institute, 2017, 8). Linking portfolio management to strategy balances the use of resources to maximize the value delivered in executing programs, projects, and operational activities. Figure 3.3 illustrates the relationship between vision, mission, organizational strategy and objectives, and portfolio management. Portfolio management requires constant alignment to strategic objectives and the ability to envision alternative future consequences to support and enhance strategic portfolio decision making (Project Management Institute, 2017, 8). Successfully managing strategic alignment allows the portfolio manager to effectively respond to changes in organizational strategy and enhances the ability to act on strategic changes that affect portfolio management.

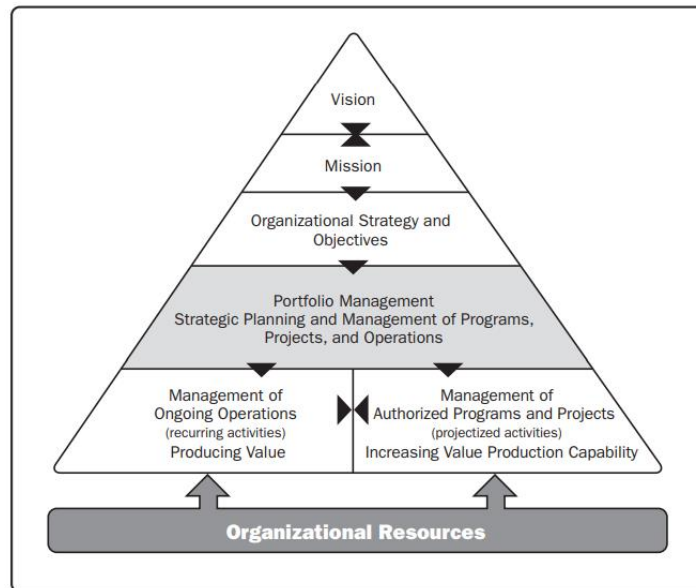


Figure 3.3. The Organizational Context of Portfolio Management. Source: Project Management Institute, 2017, 8.

The ultimate goal of linking portfolio management with organizational strategy and strategic business execution is to establish a balanced, realistic plan that will help the organization achieve its goals. The impact of the portfolio management upon strategy is measured through six performance management domains and the portfolio life cycle, as illustrated in Figure 3.4.

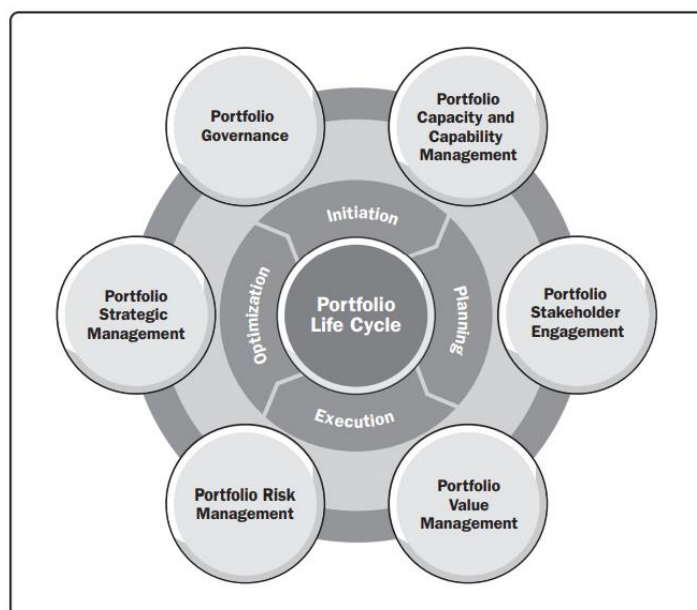


Figure 3.4. Portfolio Management Performance Domains. Source: Project Management Institute, 2017, 10.

3.2 PORTFOLIO LIFE-CYCLE

A portfolio's continuous life cycle consists of several stages: initiation, planning, execution, and optimization. As a portfolio progresses through its life cycle, information and decisions are passed within and between each of these stages (Figure 3.5).

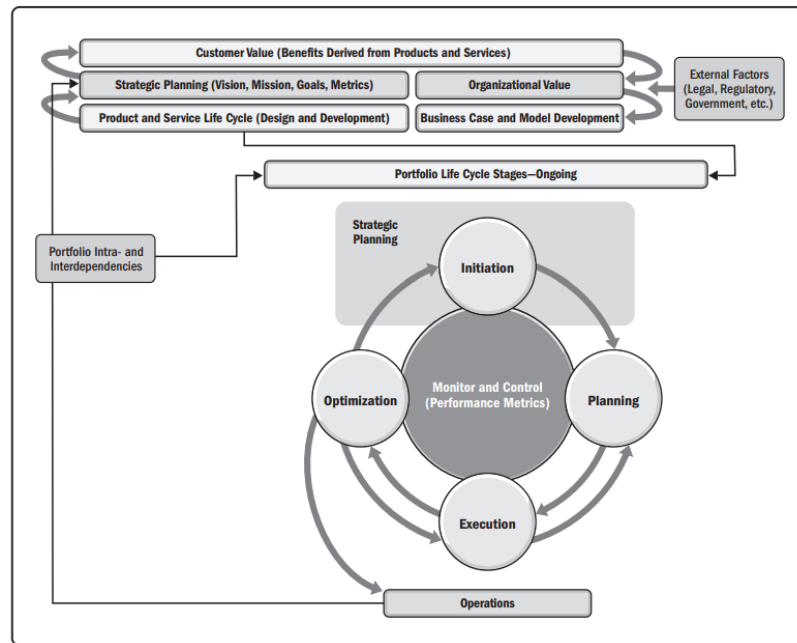


Figure 3.5. Information and Decisions Flows Within Portfolio Life Cycle. Source: Project Management Institute, 2017, 22.

All stages within the portfolio are adaptable, flexible, and fluid: the portfolio can be changed and updated to adapt to internal and external factors. The Standard for Portfolio Management (2017) proposed an example of a Portfolio Life Cycle with all major activities carried out at the portfolio level as well as at the component level, as shown in Figure 3.6.

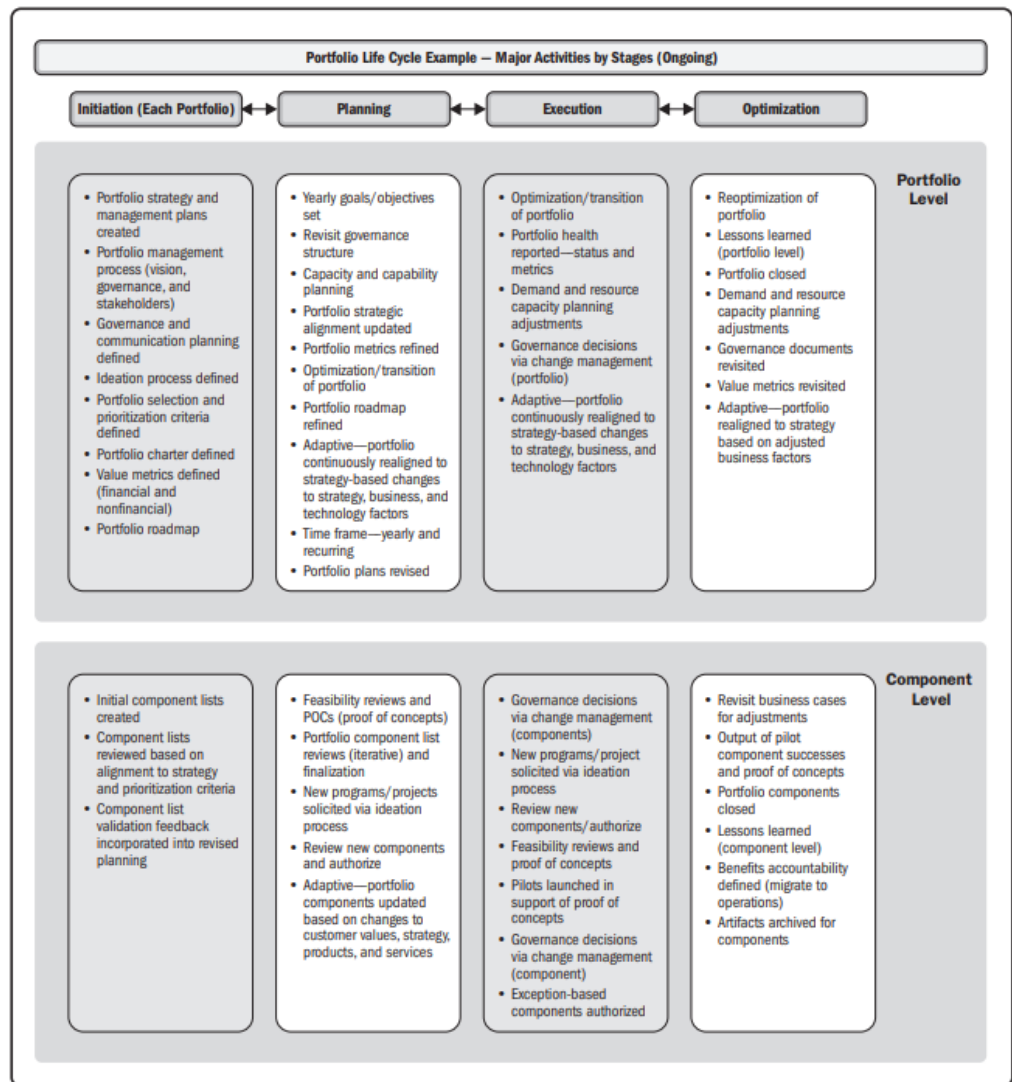


Figure 3.6. Example of Portfolio Life Cycle Major Activities. Source: Project Management Institute, 2017, 23.

The initiation phase includes the organizational objectives and goals and provides the approach and principles for major processes, defining how the portfolio and its components will be managed throughout the life cycle. During this stage, it's crucial to define a long-term roadmap with financial goals, performance metrics, communications, governance, stakeholders' definition and roles, and ongoing management plans for the portfolio and its components.

The planning stage has the purpose of developing the portfolio management plan, including the scope management of portfolio components, budgeting, identification of interdependencies between portfolios and their components, identification of risks and response plans, resourcing requirements,

confirmation of governance and stakeholder accountability, product and/or services requirements and specifications (Project Management Institute, 2017, 24).

The execution phase has the goals to deliver all components within the portfolio, actively manage and resolve risks, facilitate portfolio and component communication, reprioritize, and change subsidiary portfolios as needed, monitor benefits realization, and manage portfolio assets and resources.

Finally, optimization is the process of making a portfolio as effective as possible by maximizing available conditions, constraints, and resources. As it can be noticed, the sustainability component is not integrated into the framework, therefore lacking one of the main drivers that an organization should have to carry out its business.

3.3 PORTFOLIO STRATEGIC MANAGEMENT

Portfolio Strategic Management is “the management of intended and emergent initiatives that are often identified at an executive level and provide the very fabric under which portfolio management is executed” (Project Management Institute, 2017, 29). To successfully manage a portfolio, alignment of strategic management and portfolio management is necessary. The portfolio strategic plan explains the key components of the portfolio management cycle, describing the key decisions, planning criteria, governance and optimization considerations, and execution elements. Portfolio Strategic Management’s purpose, therefore, is to develop a portfolio’s strategic plan that is aligned with the company’s vision and mission statements, its strategic goals, its strategic objectives, and its strategic initiatives. The Standard for Portfolio Management (Project Management Institute, 2017) provides some examples of strategic goals - such as entering a new market, improving profitability, improving customer satisfaction - and of strategic objectives - such as compliance, market position, productivity. Even though among the examples of strategic objectives cited there is social responsibility and value creation, this is not enough. Since Portfolio Strategic Management is the primary link between a company’s strategy and a portfolio, the sustainability aspect - comprising economic, social, and environmental elements

as explained in Chapter 2 - should be the focus of this performance domain. The Standard for Portfolio Management should therefore integrate this performance domain with sustainability considerations as main drivers to achieve alignment between strategy and projects.

3.4 PORTFOLIO GOVERNANCE

Portfolio Governance is “a set of practices, functions, and processes within a framework based on a set of principles that are fundamental norms, rules, or values that guide portfolio management activities in order to optimize investments and meet organizational strategic and operational goals” (Project Management Institute, 2017, 43). Portfolio governance’s principles influence the governance of all portfolio’s components, including projects and programs, and helps reduce the risk of ambiguities, issues, and conflicts. The main factors that need to be considered when designing portfolio governance are legislative environment, regulatory environment, decision-making hierarchy, alignment with organizational governance, and alignment with organizational culture.

3.5 PORTFOLIO CAPACITY AND CAPABILITY MANAGEMENT

Capacity is the organization’s ability to fulfill aggregate resource demands for successfully executing a planned portfolio of initiatives. Portfolio execution needs four major categories of capacity or resource needs: human capital, financial capital, assets, and intellectual capital. Capacity management helps identify what resources are needed, how many are needed, and when resources are needed. Capability management addresses the attributes, competences, and skills associated with resources. Figure 3.7 shows the relationship between capacity and capability management within portfolio management.

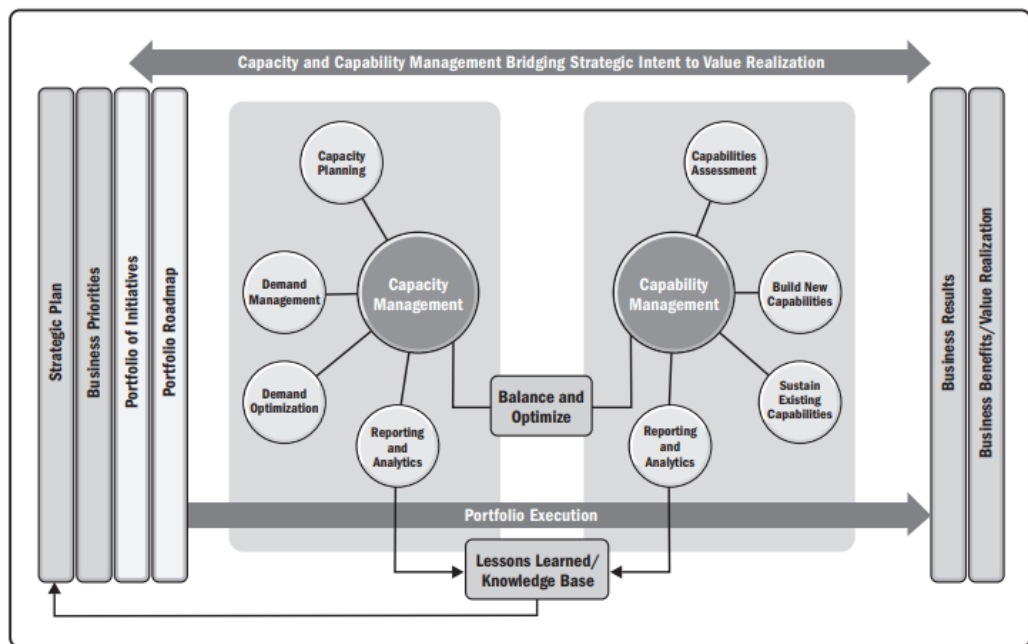


Figure 3.7. Capacity and Capability Management Components of Portfolio Management. Source: Project Management Institute, 2017, 53.

Capacity management includes crucial activities for resource management. Capacity planning entails the forecasting of resource demands and the available supply of resources for portfolio execution. Supply and demand management involves analysis and resource allocations for portfolio components to balance supply and demand. Demand optimization involves ongoing measurements and the monitoring of resources for needed course corrections and adjustments during portfolio execution. Reporting and analytics involve identifying and capturing data and associated analysis for trends and patterns to aid with portfolio decision making.

Capabilities are the potential of the organization that may or may not be exploited and it's crucial that organizations continue to assess and evaluate their environment to identify new capabilities to develop and sustain existing capabilities in line with business strategy and market conditions.

Capacity and capability require balancing for effective portfolio execution and optimization, attaining strategic goals and objectives, and delivering value to the organization.

3.6 PORTFOLIO VALUE MANAGEMENT

Portfolio value management ensures that investment in a portfolio delivers the required return as defined in the organizational strategy. The Standard for Portfolio Management lists the tangible value that an organization seeks: skills uplift, resource capacity, market share, client satisfaction, economic value. Intangible value includes brand awareness, organization's reputation, risk exposure, compliance, and societal value. The key activities required for effective portfolio value management are negotiating expected value, maximizing return, realizing value, measuring performance, and reporting value. As value in its broader terms – the meaning is explained in Chapter 4.1 – is the fundamental aspect of an organization's business, this performance domain should include the analysis of long-term value that concerns not only the firm itself, but the whole impact and consequences that the products and services have on the planet and the society in the long-term.

3.7 CURRENT STATE AND THE ROLE OF PROJECT PORTFOLIO MANAGEMENT

Organizations are increasingly making firm commitments to sustainability. The rising global awareness of environmental and social issues is driving companies to place a greater emphasis on investments in sustainability. 82 percent of the FTSE 100 - which is an index consisting of the shares of the 100 biggest companies by market capitalization on the London Stock Exchange – have committed to net zero emissions by 2050, and more than 700 of the largest 2000 publicly traded companies have made net zero commitments (Goddard, 2022). However, there is a significant gap between the commitment and the ability to achieve sustainability goals. This concept is translated by the idea of 'greenwashing', where companies make false or misleading information about their environmental objectives, whether unintentionally or as a deliberate marketing strategy (Groves, 2022). According to Goddard (2022), among the 82 of FTSE 100, only 40 are participating in the Science-based Targets Initiative;

only 42 percent of the Climate Action 100+ focus companies include Scope 3 emissions, and only 17 percent have strong quantified decarbonization strategies in place to reduce their greenhouse gas emissions. Although most corporate strategies include sustainability among their goals, the current gap is due to the lack of operationalization of sustainability across the whole organization or the lack of deliberate willing to actually commit. Volkswagen's "Clean Diesel" advertising campaign aimed at spreading the idea that diesel emits less airborne pollutants than unleaded petrol. It was later found out that Volkswagen had put emission-cheating software in 11 million of its diesel cars; in reality, Volkswagen's cars emitted 40 times the legally permitted level of nitrogen dioxide (Groves, 2022). Stating of being a sustainable company in the mission statement is not enough; rather, sustainability must be fully integrated and embedded into the organization's brand, purpose, products, and services across all value chain and in the long term.

With this purpose in mind, project portfolio management represents the link between the corporate strategy and the operations, therefore the means to embed sustainability into an organization. Stanford's Strategic Execution Framework (SEF) is shown in Figure 3.8, and it makes it clear that the top part of an organization - mission, vision, identity, culture, structure, goals, and strategy - is linked to a company's daily operations through portfolios, programs, and projects. Portfolio management ensures that programs, projects, and in turn operations are aligned with and integrated into the business' strategy, mission, vision, and values.

procurement management. Chapter 4 outlines the ideal future state of project portfolio management, in which sustainability aspects are considered and integrated in every phase of both portfolio management and project management.

4. FUTURE STATE: BROADER VIEW OF VALUE AND INTEGRATION OF SUSTAINABILITY

4.1 A BROADER VIEW OF VALUE

In order for companies and society to thrive, the concept of value must broaden its meaning and include all those tangible and intangible aspects in addition to the financial outcome of a business. Value is the total sum of the benefits created by a company and it includes every aspect of the Triple Bottom Line - People, Planet, Profit. Moreover, when taking a broader perspective on value creation, beyond financials, assessing how all stakeholders perceive the organization's performance is crucial: different stakeholders may have different perspectives and understanding this enables a company to maintain a balance between short-term and long-term benefits. Finally, value needs to be considered with a long-term perspective; companies should articulate their strategy with future performance in mind. Value, therefore, includes the following aspects:

- Financial value.
- Human value - created through the employment and development of people, in terms of culture, engagement, leadership, know-how and skills.
- Consumer value - the functional or emotional value created through goods and services.
- Societal value - created through the relationship between the organization and all external stakeholders, including the environmental, social and economic impacts across the whole value chain.

4.2 LONG TERM VALUE FRAMEWORK AND METRICS TO MEASURE VALUE

In 2017, the Coalition for Inclusive Capitalism launched the Embankment Project for Inclusive Capitalism (EPIC) together with EY and 31 companies, asset managers, and asset owners. EPIC resulted in the creation of the Long-Term Value Framework - shown in Figure 4.1 -, whose purpose is to identify and create methodologies and new metrics to measure and demonstrate long-term value of businesses.

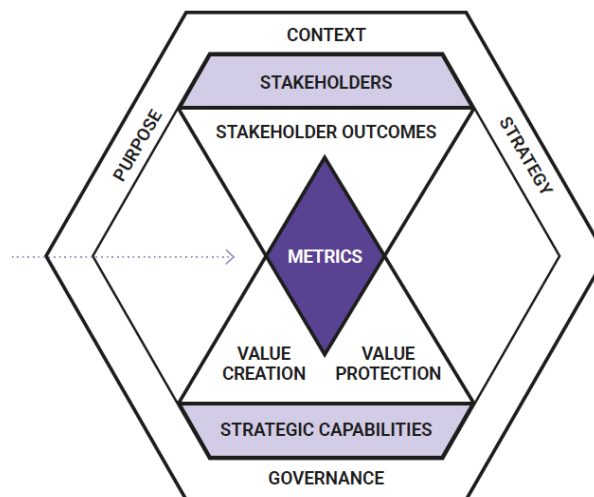


Figure 4.1. Long Term Value Framework. Source: EY & The Coalition for Inclusive Activism, 2021.

The first step of the framework is analyzing the external *context* and making sure to examine factors such as macroeconomics, social, technological, political, and market trends. As context rapidly evolves, this analysis is dynamic and allows to determine the current and future trends along with the stakeholders and their desired outcomes. After that, it is crucial that a company communicates its *purpose*, that is a clear explanation of its reason for being and reviews its strategy and governance. *Strategy* provides the indication of the future direction, while *governance* enables the proper strategy execution, direction, control, and monitoring. The framework also involves analyzing *stakeholders* and their desired outcomes in a holistic manner, including their interdependencies, so that their

perspectives are structured, helping to focus on how value is created over time. *Value* creation and protection includes the broader view of value - see Chapter 4.1. The *strategic capabilities* are resources that are valuable, rare, inimitable, and organized that create competitive advantage and must be analyzed to create value. Finally, the last step is to identify the relevant *metrics* to measure both the company's ability to meet stakeholders' outcomes and the strategic capabilities. The metrics can be common across industries, sector-specific, or company-specific. Despite the differences between different companies, the drivers of value over the long-term are consistent and it is possible to identify metrics that can be applied across different industries. The experts, authors of the EPIC project, identified the metrics to measure a company' value and divided them into seven categories: human capital deployment, employee health, organizational culture, consumer health and trust, innovation, Sustainable Development Goals (SDGs), and corporate governance.

4.2.1 Human Capital Deployment Metrics

These metrics measure the company's ability to deploy the knowledge, skills, and capabilities of its employees. Investing in talent pipeline to attract and retain employees is crucial in creating business value. The metrics identified – shown in Figure 4.2 – are divided into five dimensions: workforce costs, attraction, recruitment and turnover, workforce composition and diversity, training, learning and development, and engagement and wellbeing.

HCD Dimension	Metrics	Narrative reporting recommendations
Workforce cost	<ul style="list-style-type: none"> Total sum of gross salaries, bonuses and pension benefits of all company employees <p>Other: Guaranteed pay; employer costs; variable pay; benefits; equity-based compensation</p>	<ul style="list-style-type: none"> What is the total cost of your employees, including their base salary? How much are you spending on incentives, including bonuses? What are your employer costs? (e.g. taxes) <p>Good practice: One clear number of total workforce cost</p>
Attraction, recruitment and turnover	<ul style="list-style-type: none"> Percentage of employee annual turnover (by region, age and gender) Percentage of voluntary turnover in relation to percentage of overall turnover Percentage of voluntary turnover of high performers <p>Other: Cost per hire (recruitment costs divided by the sum of compensation cost and benefit cost); recruitment effectiveness (rate of satisfaction with hiring process); talent identification (percentage of identified talented individuals per department); rate of retention of new starters</p>	<ul style="list-style-type: none"> What are your recruitment trends? What does your talent pipeline look like? What are your retention trends? What are the typical turnover periods? <p>Good practice: Reporting percentage of reduced voluntary turnover or percentage of turnover for high performers</p>
Workforce composition and diversity	<ul style="list-style-type: none"> Leadership diversity (gender, orientation etc.): <ul style="list-style-type: none"> Percentage of management Percentage of top leaders Percentage of board of directors Modes of employment: ratio of labor types (e.g. Full-time to part-time labor split) <p>Other: Department gender ratios; percentage of internal hires and external hires; headcount</p>	<ul style="list-style-type: none"> What do the employee profiles look like? What is the total headcount and the role ratios? What are the various modes of employment? What are your leading trends around inclusion, such as the diversity in your leadership teams? <p>Good practice: Leadership diversity figures</p>
Training, learning and development	<ul style="list-style-type: none"> Return on investment in talent (ROIT): (realized benefits minus costs) divided by costs multiplied by 100 Total annual training hours received per employee (per type) Total spend on training per employee or per hour <p>Other: Percentage of employees demonstrating an improved understanding of the topic trained; capability development (change in number of capabilities per employee)</p>	<ul style="list-style-type: none"> How has the training led to improvements in employee knowledge? How has the training led to improvements in employee capability? What are the hours of training employees have received? <p>Good practice: Where has training led to an improvement for employees</p>
Engagement and wellbeing	<ul style="list-style-type: none"> Engagement index score Absenteeism rate as a percentage of total hours worked Mental health wellbeing rate: number of lost days per year divided by total days (by department) <p>Other: Percentage of positive opinion engagement survey responses (commitment); percentage of ill-health retirements; employee assistance service usage rate; quality of support received through employee assistance service</p>	<ul style="list-style-type: none"> What are your staff survey engagement scores? What does employee commitment look like within your organization? Have there been any ill health retirements or voluntary resignations? Are there employee assistance programs in place? Are they being accessed? What is the outcome of this?

Figure 4.2. Human Capital Deployment Metrics. Source: EY & The Coalition for Inclusive Activism, 2021.

4.2.2 Employee Health

The health and well-being of the workforce enhances engagement, job satisfaction, productivity, decreased absenteeism, turnover and workplace injuries. The metric identified – described in Figure 4.3 - consists of percentage of employees participating in ‘best practice’ health and wellbeing program, that includes lifestyle management, chronic disease management, and access to healthcare and insurance. This program ensures to support employees with

psychological safety, physical and emotional health, health assessments, access to healthcare and health insurance.

	Metrics	Narrative reporting recommendations
Employee health	<p>Percentage of employees participating in 'best practice' health and wellbeing program</p> <p>Supporting this metric the following quantitative information is required:</p> <ul style="list-style-type: none"> Number of employees offered a health and wellbeing program that has 3 components: Lifestyle management, disease management, and access to healthcare Rate of absenteeism 	<ul style="list-style-type: none"> Describe the content and reach of the health and wellbeing program and specifically how it addresses lifestyle management, chronic disease management and support, and access to healthcare and insurance Within the description specifically point out how the following drivers for wellbeing are included within the program²²: <ul style="list-style-type: none"> Mental and physical health Meaning and purpose Happiness and life satisfaction character strengths Social connectedness/close social relationships Financial and material stability Describe how effective your program's participation strategies are in encouraging employees to participate in programs Describe how you assess employees' health and wellbeing, baseline and or activity levels Describe other actions aimed at improving their health Describe any mechanisms in place to track correlations between your wellbeing program and the main associated outcomes (engagement, job satisfaction, turnover, absenteeism, work injury and productivity) and how these outcomes have developed over time Describe your strategy and monitoring processes to provide a healthy physical working environment (e.g. percentage of buildings certified to Well or LEED)

Figure 4.3. Employee Health Metrics. Source: EY & The Coalition for Inclusive Activism, 2021.

4.2.3 Organizational Culture

Cultural aspects such as teamwork, accountability, drive are key factors for high performance and long-term value creation. Keeping in mind that culture is the unique mix of attributes and behaviors people experience when at work, the crucial dimensions suggested by EPIC project that need to be tracked are the following: inclusion and wellbeing, performance and accountability, ethics and integrity, engagement and empowerment, alignment with purpose and values, leading by example, risk management, external stakeholders focus, teaming, adaptability and innovation. In order to measure these aspects, companies should periodically survey their employees to understand their insight.

4.2.4 Innovation

Innovation can take many forms, ranging from incremental improvements to ground-breaking and industry-changing disruptions, but also from products and services to processes and entire business models. Measuring innovation is a huge challenge, since it cannot be communicated through the use of metrics alone but also it needs to be explained through narrative. Although a one-fits-all approach does not exist for all companies in all industries, the innovation process can be divided into four steps – ideation, development, launch, and maturity – and each step can be associated with metrics, as shown in Figure 4.4.

Metric	Narrative reporting recommendations	Metric	Narrative reporting recommendations
Primary metrics <ul style="list-style-type: none"> Idea generation: Number of collected ideas that were implemented during the reporting period according to strategic priorities and/or further categories such as innovations around existing products, new products, services, business models and disruptors Secondary metrics <ul style="list-style-type: none"> Innovation time spent: Percentage of aggregate employee time spent on innovation activities 	<ul style="list-style-type: none"> Describe your idea management process and system: How do you select ideas? Do all ideas have the same chance of being validated, independent from their source and origin? How are innovative ideas generated (internally, customer driven, partnerships with academia etc.)? If they were created internally, from which seniority level did they originate? What processes are available internally for your employees to develop, submit ideas and improvement suggestions? How do you allocate time and capital towards the most impactful innovative ideas? Do you reward idea generation by a bonus or other remuneration program? 	Primary metrics <ul style="list-style-type: none"> R&D spending ratio: R&D spending as a percentage of sales, spending per strategic priority area, spending for sustainability related products or services R&D FTEs: Number of R&D positions in full-time equivalents Patents: Distribution of patent portfolio per strategic priority area Secondary metrics <ul style="list-style-type: none"> R&D projects: Number of R&D projects pursued during the period of disclosure Market development: Investment in development of new markets (money spent, projects developed) Innovation throughput: Average length of the steps of the innovation process (in months) Customers: R&D projects involving customers IPRs citations: Number of intellectual property rights (IPRs) citations 	<ul style="list-style-type: none"> Describe the development portfolio of your innovation projects with regards to your strategic priority areas and the type of innovation (e.g. products; services; processes; business model). Describe how you utilize and invest in your innovation capabilities and infrastructure (e.g. the possibility to do open innovation and/or systematic tech management, partnerships with academia, outsourcing innovation)? Describe how you allocate time and capital towards the most impactful and innovative ideas

Metric	Narrative reporting recommendations	Metric	Narrative reporting recommendations
Primary metrics <ul style="list-style-type: none"> Innovation revenue forecast: Revenue forecast from innovation pipeline in the e.g. coming 5 years (in addition to reported credibility rating on forecast based on past experience) Success rate in percentage per process phase: Average ratio of ideas which moved to the next process phase (ideation, development, launch, maturity or your own process phases) Secondary metrics <ul style="list-style-type: none"> Ideas throughput: Number of ideas that made it into the product/service portfolio during the measurement period 	<ul style="list-style-type: none"> How are you positioning a product, service or new business model in the market? How do you overcome adoption hurdles and market entry hurdles? Describe the past success rate regarding the revenue forecast How long does it take from the first approval of a project to its launch on average? Are there processes to decrease the time to market? 	Primary metrics <ul style="list-style-type: none"> Vitality index: Percentage of revenues from products, services or new processes introduced in recent years Societal value generated: Number of innovations and associated sales which are addressing sustainability challenges (e.g. innovations related to the SDGs) Secondary metrics <ul style="list-style-type: none"> Gross margin: Innovations gross margin for new products or services Existing product innovation: Number of improvements made to existing products, services or processes Customer satisfaction: Increase of customer satisfaction by or with new products or services Process innovation: Cost reductions as a percent of costs of goods sold due to new processes Incremental product innovation: Average time to profitability for changes to existing products or services 	<ul style="list-style-type: none"> Describe how your actual product or service portfolio indicates successful innovation in the past. Are the products or services as successful as expected in terms of sales and margin? Describe how long it takes to fully penetrate the customer base with a new innovative product or service.

Figure 4.4. Innovation Metrics. Source: EY & The Coalition for Inclusive Activism, 2021.

4.2.5 Consumer Trust

High consumer trust translates in high performance over the long term. The five components of consumer trust are fulfillment of commitment (delivery consistency), benevolence of intention (integrity), knowledge and skills (delivery proficiency), truthfulness (openness), and sincerity (advocacy). The metric of this dimension is shown in Figure 4.5.

	Metric	Narrative reporting recommendations
Consumer trust	Total net trust score Total volume of 'net positive trust' digital conversations specific to an organization, company or brand divided by total volume of digital conversations specific to an organization, company or brand	<ul style="list-style-type: none"> Analyze and describe the issues, factors and trends shaping the trust profile under each element of trust and overall Cluster data to create separate stakeholder perspectives including customer, investor and regulator views Analyze the impact of both operational and strategic activities and events on the level of trust in an organization, company or brand Analyze and understand the influence of market structure and competitive landscape on the impact of trust on an organization, company or brand's performance. For example, the less competitive a market the lower impact of fluctuations in trust on consumer decision-making and therefore financial performance.

Figure 4.5. Consumer Trust Metric. Source: EY & The Coalition for Inclusive Activism, 2021.

4.2.6 Consumer Health

EY and The Coalition for Inclusive Activism (2021) propose two categories of metrics concerning consumer health: pragmatic and ambitious – shown in Figure 4.6. The former ones determine if consumers’ lives are directly improved by the products or services and measure how many people have reached; the latter ones measure the extent to which a product impacts health in a community. The ambitious metric proposed is the QALY (Quality Adjusted Life Years) gained, and DALY (Disability Adjusted Life Years) avoided.

	Metric	Narrative reporting recommendations
Consumer health (pragmatic)	Number of people with improved quality of health through sales of products and services	Describe what products are classified as either having an improved or reduced quality of health and the associated long-term marketing and strategy in developing these
	Number of people with a reduced quality of health through sales of products and services	<p>Other supporting quantitative information to be included:</p> <ul style="list-style-type: none"> • Associated product or service revenues with improved and reduced quality of health • Market potential in terms of people reached for products or services based on existing and long-term going to market strategies
	Metric	Narrative reporting recommendations
Consumer health (ambitious)	Number of QALYs gained or number of DALYs avoided	<p>Supporting this metric the following quantitative information is required:</p> <ul style="list-style-type: none"> • Associated product revenues • Market potential for products or services in terms of people reached or burden of disease based on existing and long-term going to market strategies
	Alternatively: Social impact of products in monetary terms	

Figure 4.6. Consumer Health Metrics. Source: EY & The Coalition for Inclusive Activism, 2021.

4.2.7 Sustainable Development Goals (SDGs)

To measure the societal and environmental value a company creates, the Sustainable Development Goals (SDGs) created by the United Nations in 2015 as a universal call to action to end poverty, protect the planet, and ensure by 2030 all people enjoy peace and prosperity are the most comprehensive framework. EY and The Coalition for Inclusive Activism identified the metrics that explain how the 17 global goals create business long-term value and, in particular, they focused on the 8 SDGs most relevant to economic growth, job creation, limiting environment impacts, community engagement, and diversity and inclusion. Figure

4.7 shows the 8 SDGs taken into consideration, while Figure 4.8 outlines the metrics identified.

SDGs in scope



Figure 4.7. SDGs in Scope for EPIC Project.

Metric	Definition	Long-term value link	Business theme (stakeholder outcome)	SDG alignment
Gross value added (GVA)	<p>Gross value added (GVA) describes a company's wider contribution to the gross domestic product (GDP) of the market in which it operates.</p> <p>Calculation: Direct value of gross output (sum of revenue, variation in stock and self-produced equipment, minus goods of resale) less the value of intermediate consumption (sum of raw materials, auxiliary materials and other intermediary inputs). In addition, the indirect GVA impact can be calculated through an economic multiplier derived from e.g. OECD input-output tables which gives additional insight into wider economic contributions.</p>	<p>GVA measures the appreciation in value, less intermediate consumption, which was created by a company.</p> <p>The metric is linked to economic growth and development; both on a company level, in terms of its correlation with long-term financial performance (revenues, EBIT, market capitalization),³⁵ as well as at a macroeconomic level (all companies' GVA results added together sum up to the given market's total GDP).</p>	Economic growth (Job creation)	SDG 8
Number of people engaged through community health initiatives³⁶	<p>For well-researched areas, such as the importance of physical activity for improved health, it is already insightful to track the number of actual participants per initiative rather than trying to measure the health impact of the intervention.</p> <p>Calculation: Number of people engaged through community initiatives.</p>	Community initiatives are important for a company's long-term value creation, particularly if it is aligned with a company's purpose in maintaining its societal license to operate. Also, it can offer opportunities to engage with other stakeholders such as new customers.	<ul style="list-style-type: none"> Healthy communities (Purposeful community engagement) 	SDG 3
Social return on investment (SROI) of health-related community initiative³⁷	<p>This metric measures the monetized social impact of community health initiatives.</p> <p>Calculation: Social return on investment for health-related community initiatives equals total social return on investment divided by initial total investment.</p>	Indicates how companies are spending their funds on community initiatives, which is important for a company's long-term value creation. Particularly if this spending is aligned with the company's purpose, as an indication of how it is maintaining its societal license to operate.	<ul style="list-style-type: none"> Healthy communities (Purposeful community engagement) 	SDG 3

Metric	Definition	Long-term value link	Business theme (stakeholder outcome)	SDG alignment
Water intensity	Water intensity directly measures the efficiency of a company's water management, including its supply chain. Calculation: Total amount of water use in m ³ (direct in own operations and indirectly through suppliers, differentiated by level of water scarcity) divided by revenue or profit.	Water intensity can be directly linked to revenue growth potential, production costs and profits. Measuring water intensity contributes to improved water risk management (increasing water scarcity, long-term risk-adjusted water pricing).	<ul style="list-style-type: none"> Water management Resource efficiency (Limiting environmental impact) 	SDG 6 SDG 12 SDG 13
Energy/carbon intensity (efficiency) of building stock/real estate portfolio	Energy and carbon efficiency link back to the environmental impact of a company's building portfolio. Two possible calculations are proposed: 1. Total volume of CO ₂ e divided by real estate portfolio in m ² or number of occupants; 2. Total quantity (e.g. in kWhs) of energy usage divided by real estate portfolio in m ² or number of occupants.	Energy and carbon efficiency measure a company's ability to conduct its business in an efficient manner and indicate future growth and value creation potential (e.g. operational cost savings, long-term growth potential). Energy and carbon efficiency relate to a company's ability to manage exposure to climate-related regulatory risks.	<ul style="list-style-type: none"> Air quality Climate change Resource efficiency Sustainable buildings (Limiting environmental impact) 	SDG 12 SDG 13
Carbon price risk	Carbon price risk reports on the long-term financial impact of different carbon pricing scenarios, by estimating the effect of a potential carbon price on a company's operating profit through direct pricing of a company's own emissions (scope 1), indirect pricing through purchase of electricity (scope 2), purchase of suppliers (scope 3 – upstream) or revenues at risk due to emissions of sold products (scope 3 – downstream). Calculation: Carbon emissions (scope 1, 2 and 3) multiplied by carbon price scenario (USD 25, USD 50 and USD 100 per tonne CO ₂ e) in relation to revenue or operating profit.	Metric is linked to long-term financial performance through its influence on costs, revenues, profits or investment returns. Metric is intended to provide information on a company's strategic proposition to be successful over the long term in a carbon constrained world and contributes to improved risk management (increased environmental regulation or supply chain risks).	<ul style="list-style-type: none"> Climate risks and opportunities (Limiting environmental impact) 	SDG 12 SDG 13
Resource efficiency score	The resource efficiency score expresses how efficiently a company uses resources in its production processes. Calculation: Average of firm's efficiency in CO ₂ e, water use and waste production. Composite score is calculated by equally weighting (industry standardized) efficiency rates (total amounts of carbon emissions, water and waste divided by a firm's total revenue or profit).	Metric provides indication for a company's ability to limit its environmental impacts and to generate future growth. Companies with low efficiency scores may face increased risks from environmental regulation, increased operational costs, and lower growth potential in the long term. If further strategic resources would be included – on a company by company basis – the score could become even more indicative of long-term performance.	<ul style="list-style-type: none"> Resource efficiency (Limiting environmental impact) 	SDG 11 SDG 12 SDG 13
Metric	Definition	Long-term value link	Business theme (stakeholder outcome)	SDG alignment
Employee turnover ³⁸	This metric shows the rate of employee turnover by different diversity categories such as age, gender or regional distribution. Calculation: Total number of leavers (total of number of voluntary and involuntary ones) divided by the total number of employees.	Metric links back to employees' perception of work (e.g. development, remuneration, diversity and culture) measured through retention. Metric serves as a proxy for long-term value creation through multiple direct and indirect linkages (e.g. effects on talent recruitment and development costs or employee productivity).	<ul style="list-style-type: none"> Diversity and inclusion Equal opportunity Training and education (Employee development) 	SDG 8 SDG 10
Diversity of a company's governance bodies ³⁹	Metric expresses the heterogeneity of corporate governance bodies. Calculation: Percentage of individuals within the company's governance bodies ⁴⁰ in multiple diversity categories.	Diverse teams have been found to perform better in strategic and operational decision-making and are more likely to drive innovation.	<ul style="list-style-type: none"> Diversity and inclusion (Diverse leadership) 	SDG 8 SDG 10

Figure 4.8. Sustainable Development Goals Metrics. Source: EY & The Coalition for Inclusive Activism, 2021.

4.2.8 Corporate Governance

Corporate governance, defined as the system by which all of the activities of a company are directed, controlled and monitored, is crucial to ensure the creation of long-term value. Effective corporate governance practices depend on the industry and the different circumstances, but it's important that they evolve and adapt responding to change. To keep track of the value in terms of corporate governance, the company should communicate to the stakeholders the strategic milestones expected, the remuneration, the appropriateness of board composition, the capital allocation framework along with the governance response to significant change.

4.3 SUSTAINABLE STRATEGY

A strategy based on sustainability is what every organization should aim at. Sustainable strategy incorporates the principles based on the three pillars of sustainability - the Triple Bottom Line: People, Planet, and Profit - into a management approach that creates a business strategy that generates opportunities, manage risks, provide competitive advantage, and generate a positive financial impact while protecting natural capital and improving social impact (Kohl, 2016, 21). Integrating sustainability into a company's strategy allows it to transform people, processes, and practices, creating business value while addressing financial, environmental, and social challenges.

4.4 PROJECT PORTFOLIO MANAGEMENT AND SUSTAINABILITY INTEGRATION

To make a real impact, the ideal future practice of organizations is to see sustainability as the main driver for strategic management and, therefore, for project portfolio management (PPM). The integration of sustainability within project portfolio management enables the realization of ongoing benefits for

projects-to-come thanks to the strategic relationship that sustainability and PPM have. As a matter of fact, PPM provides the link to facilitate embedding sustainability into an organization (Kohl, 2016, 143): Javed Mohammad and Yu-Chun Pan (2021) proposed a Project Portfolio Management conceptual framework that integrates sustainability into the project and PPM lifecycle in a holistic manner. Figure 4.9 depicts the model in which sustainability is an integral part of every phase.

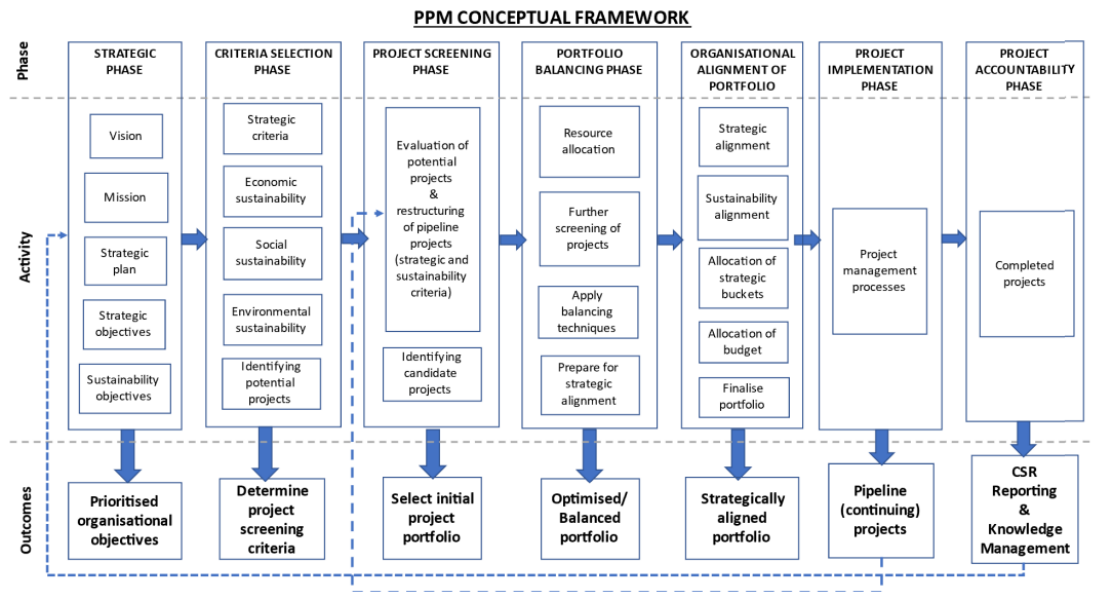


Figure 4.9. PPM Conceptual Framework Overview. Source: Mohammad & Pan, 2021, 205.

As it can be seen from the framework, every phase of the Project Portfolio Management lifecycle, from the initial strategic phase to the final projects' evaluation, is characterized by the integration of the Triple Bottom Line aspects. Projects are evaluated, prioritized, and selected with the inclusion of sustainability in line with the organizational strategy and overall objectives (Mohammad & Pan, 2021, 204). The integration of sustainability in strategy, project portfolio management and project management not only refers to the impacts of projects, but also to the process of planning, selecting, governing, evaluating, performing, and managing projects (Silviu & Marnewick, 2021). This ideal state assumes that economic, social, and environmental sustainability is one of the main organization's strategies. The whole process is guaranteed by the presence of

transparency and accountability, and practitioners' mindsets are aligned with sustainability principles.

4.4.1 Strategic Phase

As project outputs and impacts should be aligned with, and evaluated by, a set of criteria that reflect the strategic goals of the organization (Silvius & Marnewick, 2021), it's crucial to align, prioritize, govern, and evaluate projects through their combined economic, social and environmental impacts. This phase has the purpose of outlining an approved strategic plan with well-stated and prioritized goals and objectives. In order to do so, the senior executives must gather and examine the organization's vision, mission, and strategy and design a strategic plan including the strategic objectives and the sustainability objectives.

4.4.2 Criteria Selection Phase

This phase aims at identifying the criteria upon which project selection will be based. In their article, Javed Mohammad and Yu-Chun Pan (2021) propose a process flow that helps determine the criteria in a collaborative and sustainable manner. Selecting the right selection criteria is crucial since they provide the basis for selecting projects that maximize benefits for the organization, are aligned to the overall strategy as well as the principles of sustainability. It is important to mention that the criteria selected must be representative not only for the project life cycle but also for the life cycle of the product or service result of the project. Figure 4.10 shows that all key stakeholders are involved in the criteria selection phase.

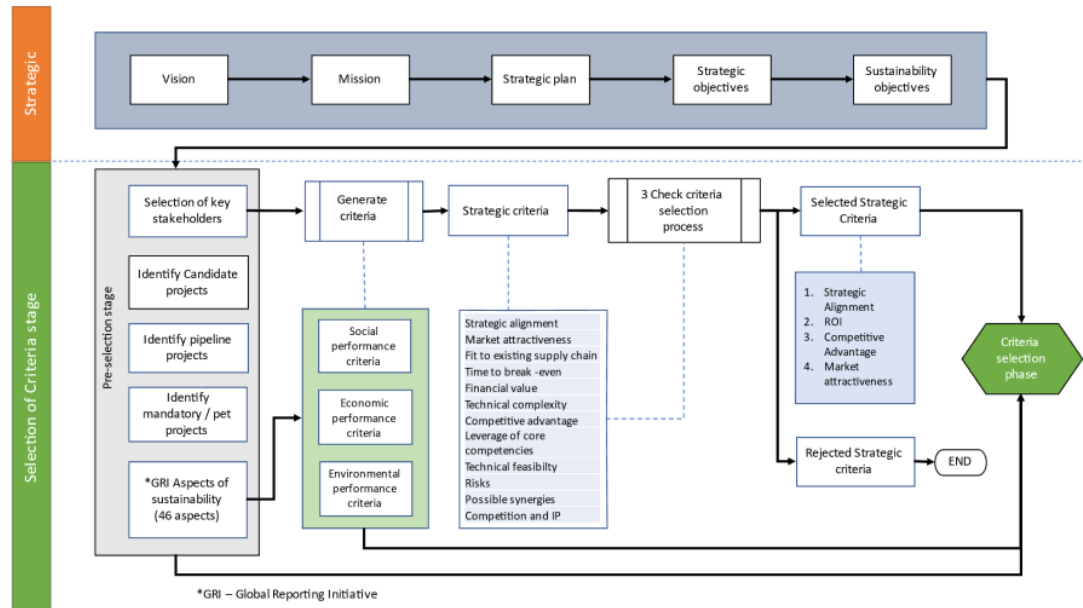


Figure 4.10. Process Flow for Selection of Criteria. Source: Mohammad & Pan, 2021, 205.

The stakeholders that take part in the selection process brainstorm and generate a list of relevant criteria or variables, then score the identified criteria. The participants must be sure that the list of variables selected are aligned with the sustainability objectives of the organization so that the projects carried out through this assessment conform to the principles of sustainability. Moreover, Mohammad and Pan (2021) suggest that the main indicators which will constitute the CSR (Corporate Social Responsibility) reporting of the organization will be based on sustainability attributes selected from the GRI (Global Reporting Initiative) framework in the interest of transparency and accountability. The participants decide any number of GRI aspects or indicators that are considered appropriate for screening projects and are consistent with the sustainability goals. Then, the participants can use any multi-criteria decision-making method (MCDM) to pairwise compare the variables thus establishing the relative importance of one variable against another. The process, as shown in Figure 4.11, is repeated for the three categories of sustainability - economic, environmental, and social. After that, the strategic and sustainability attributes are merged, and duplicates are removed: the combined list of screening attributes is ready to be used in the following phase.

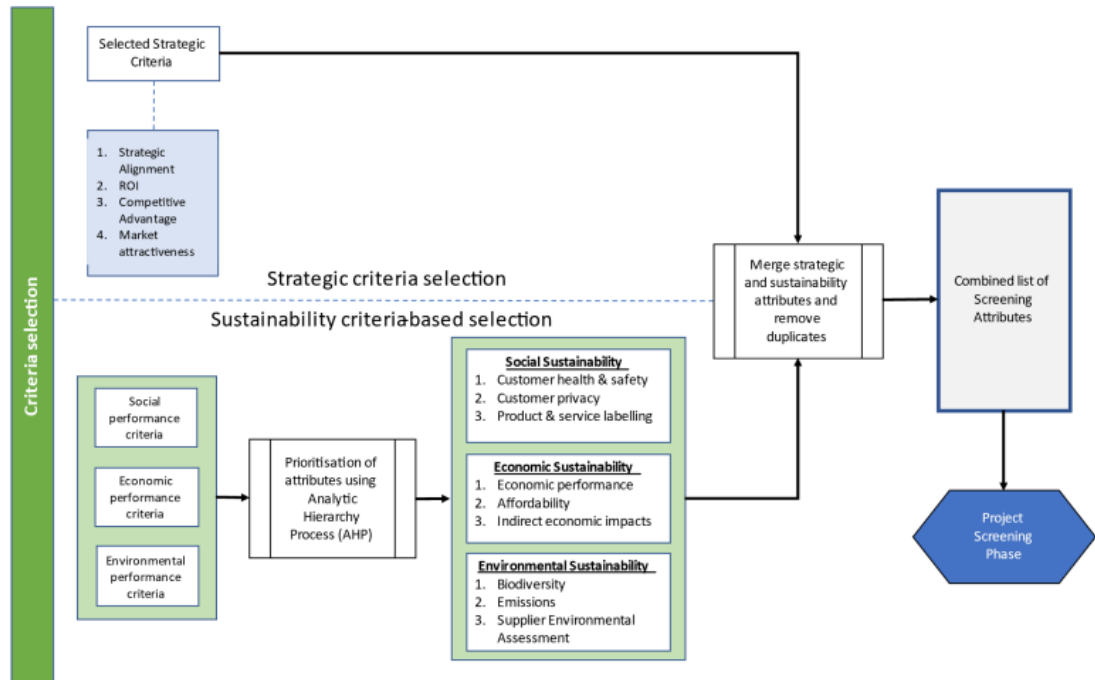


Figure 4.11. Process for Selection of Criteria. Source: Mohammad & Pan, 2021, 207.

4.4.3 Project Screening and Prioritization Phase

The first step of this phase is defining the decision criteria that will be used to screen projects. To properly screen projects there must be a measurable or quantifiable rationale for scoring. Scoring for each project is given by the participants to the process and the scores are aggregates so that projects can be ranked. In this way, an initial prioritized portfolio of potential projects is available. The process of this phase proposed by Mohammad & Pan (2021) is described in Figure 4.12. The purpose of this phase is to select an initial project portfolio using the combination of sustainability and strategic selected criteria. Projects that do not fit the criteria may be eliminated and some projects may require reconfiguration or may be postponed.

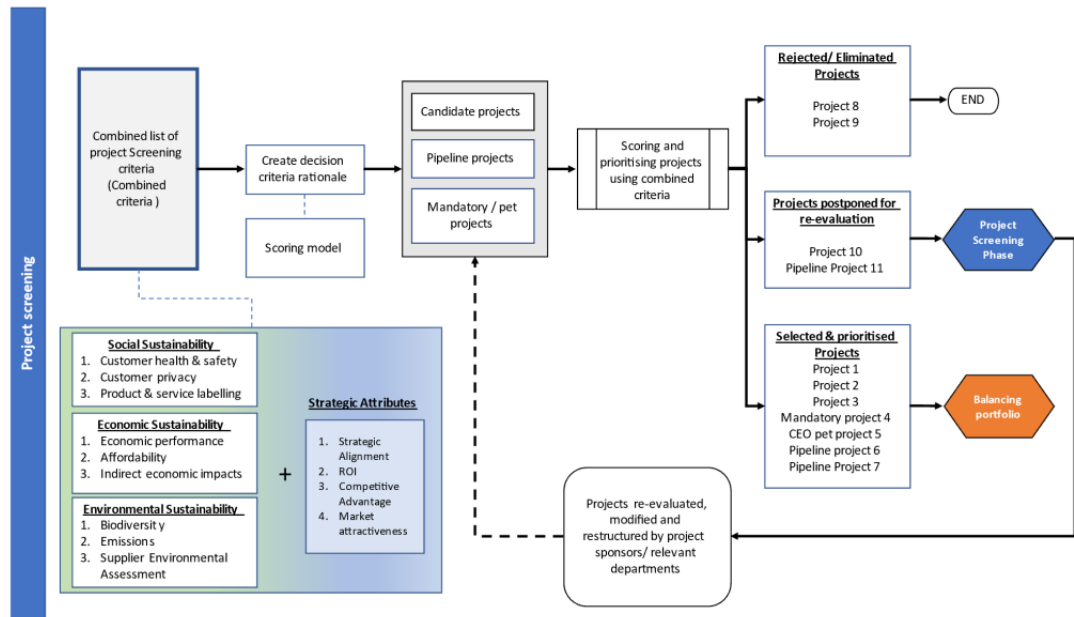


Figure 4.12. Project Screening and Prioritization. Source: Mohammad & Pan, 2021, 208.

4.4.4 Portfolio Balancing Phase

In this phase, the initial portfolio created in the steps before is assessed and evaluated to ensure the most efficient resource allocation as well as to balance the risk. The purpose is to create a portfolio that delivers maximum benefits to the organization. Projects are assessed for resource allocation and balancing techniques are applied to maximize the benefits of the projects within the portfolio, as shown in Figure 4.13.

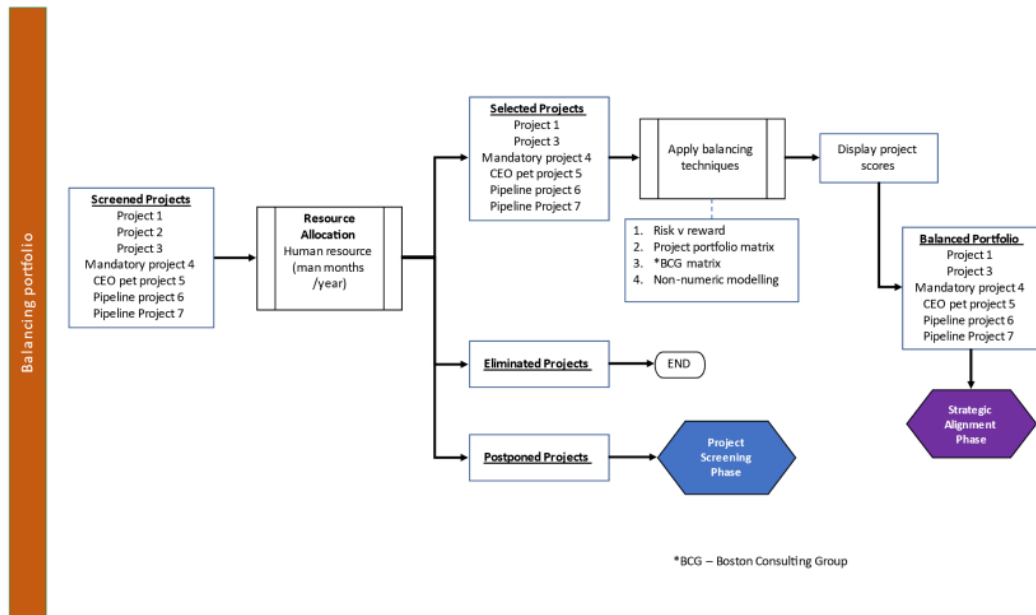


Figure 4.13. Portfolio Balancing Phase. Source: Mohammad & Pan, 2021, 209.

Several tools and methods may be used to balance the portfolio, such as the Risk/Reward bubble chart, which visually represents projects and quickly displays a portfolio's balance. The horizontal and vertical axis represent respectively the probability of success of a project and its net present value, whereas the size of the 'bubble' depicts the cost. An example of bubble chart is depicted in Figure 4.14 and, as it can be seen, there are four quadrants. The upper left quadrant refers to the '*Bread and Butter*' projects that will have low rewards but a high probability of success. The '*White Elephants*' projects in the bottom left quadrant are those projects with low probability of success and low rewards. The bottom right quadrant shows the '*Oysters*' projects within low probability of success but high return in profit. Finally, in the upper right quadrant there are the '*Pearls*' projects that have a high probability of success and also a high net present value.

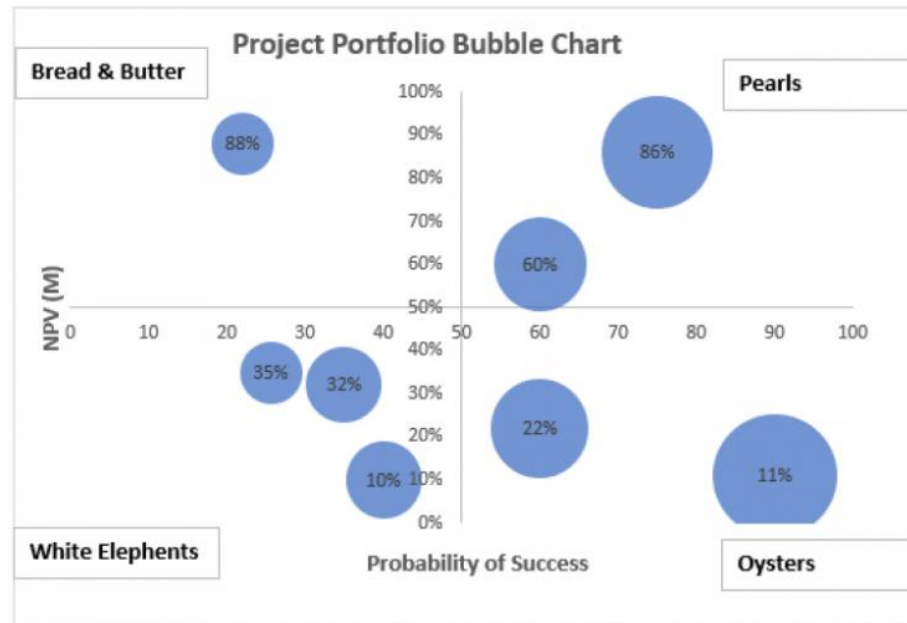


Figure 4.14. Example of Risk/Reward Bubble Chart.

4.4.5 Strategic Organizational Alignment of Portfolio Phase

A portfolio should be representative of an organization's intent, direction, and progress. In this phase, the portfolio is finalized with the projects that are most aligned to the company's strategy. The alignment must reflect the sustainability commitment as well, including the structural changes needed to integrate sustainability, sustainable processes, and effective stakeholder management. Before finalizing the portfolio, the budget allocation is also necessary to understand and analyze the budget constraints.

4.4.6. Project Management and Accountability Phase

The last two phases of the framework suggested by Mohammad & Pan (2021) refer to project management and the project lifecycle. The different aspects of project management will be explained in detail in Chapter 4.5. However, it is important to mention that complete projects must be assessed for lessons learned, sustainable performance, and reporting purposes.

4.5 PROJECT MANAGEMENT AND SUSTAINABILITY

4.5.1 Strategic Context

Projects and project management take place in the environment of portfolio management and in turn help firms realize long-term investment objectives. All projects are part of a broader strategic context, therefore there are both internal and external factors that influence a project's success. As shown in Figure 4.15, in the same way that a project manager must balance cost, schedule, and scope – the so-called Triple Constraint –, he must take into consideration the economic, social, and environmental factors surrounding the project.



Figure 4.15. Sustainability Context for Project Management. Source: Tharp, 2012.

Economic sustainability means ensuring that the project fits into the overall strategy of the firm; being socially responsible involves reflecting on organizational culture, structure, and processes, existing human resource skills and personnel practices; environmental sustainability includes the evaluation of capital equipment and facilities requirements, use of resources, purchasing practices, contract management, and industry standards in the long run (Tharp, 2012).

4.5.2 Project Charter and Scope Management

The project charter is a document that formally authorizes a project and outlines the initial high-level requirements. It does not have to be a complex document. However, a green project charter should include sustainability considerations as well as short-term and long-term perspectives in order to better evaluate the project's progress and align it with strategic orientation. Therefore, apart from the traditional statements contained in a project charter – such as the need the project is addressing, goal and objectives of the project, time frame, budget, project manager's authorization, project assumptions and constraints, sponsor's signature -, it should also include a “green statement” (Maltzman and Shirley, 2010, 83) that confirms the commitment to sustainability.

Once the project charter has been defined, the development of the project plan ensures the detailed definition of the project. The scope defines the processes and all the work required to complete the project successfully. In the broader perspective of sustainability, however, project managers must take into account ‘green considerations’, thinking about both the project itself and its processes, including the resources it consumes, and the product of the project in operations and the resources it will consume during operation (Maltzman & Shirley, 2010, 50). Moreover, the scope must include considerations such as the time at which the product of the project will be disposed of, the impacts of the project and their timelines. Maltzman and Shirley (2016) in their book “Driving Project, Program, and Portfolio Success: The Sustainability Wheel” suggest using well-known project management tools in a sustainable perspective in order to facilitate the integration of sustainability among project management practitioners. For instance, a Sustainability Breakdown Structure may be an effective tool to consider in more detail the Triple Bottom Line (TBL) when selecting and planning a project. The idea is to integrate the sustainability aspects without adding different, new, and hard techniques, while keeping using the Work Breakdown Structure (WBS) to determine schedulable, assignable work packages. An example of the structure of a Sustainability Breakdown Structure is shown in Figure 4.16.

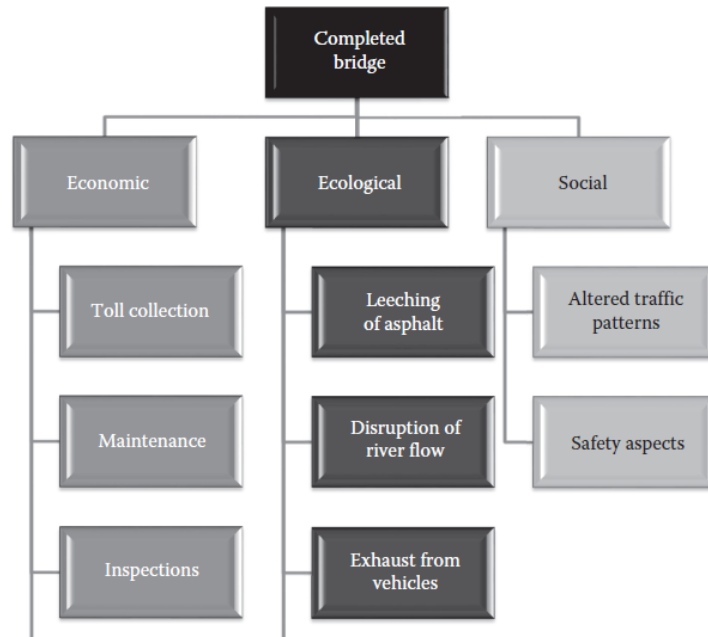


Figure 4.16. Sustainability Breakdown Structure. Source: Maltzman & Shirley, 2016, 10.

It is crucial that green considerations are planned into the project: identifying materials sustainably procured, ensuring the minimization of resources and energy waste, considering the long life of the final product after the project completion are examples of green aspects that must be included in a *green* project scope.

4.5.3 Stakeholders and Communication Management

Stakeholders are defined as those who have an interest in a project or strategy undertaken by an organization, may be affected, or may influence the project or strategy. Identifying and analyzing the stakeholders with a focus on sustainability aspects is crucial to determine their influence, power, and attitude. Stakeholders management includes identifying the project's stakeholders, their interests, impact levels, and attitude toward the change, assessing their importance and influence, outlining assumptions and risks, and finally planning the project communication strategies. Understanding the attributes, interrelationships, interfaces among and between project advocates and opponents assist in strategically planning the project. After listing all stakeholders involved in the

project, the following step is assessing them according to their power and interest along with planning their engagement strategy. The Power-Interest matrix, shown in Figure 4.17, helps plotting them and identifying the proper engagement plan.

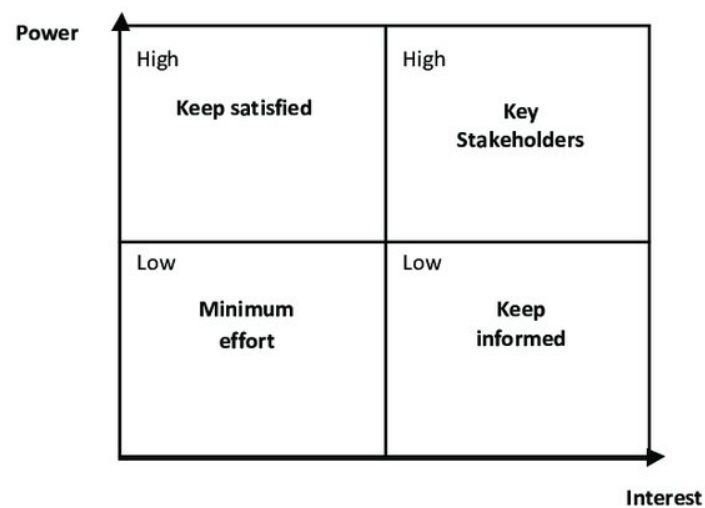


Figure 4.17. Power-Interest Matrix for Stakeholder Management.

A crucial aspect of stakeholders management is defining stakeholders’ attitude toward the project: different groups of stakeholders may be positive or negative about the project, therefore be supportive or the opposite.

The ideal stakeholders management carried out by an organization with fully integrated sustainability includes the classification of all stakeholders according to their support or interest in lasting solutions against the level of power they have. Maltzman and Shirley (2016) propose a power-sustainability grid, as shown in Figure 4.18.

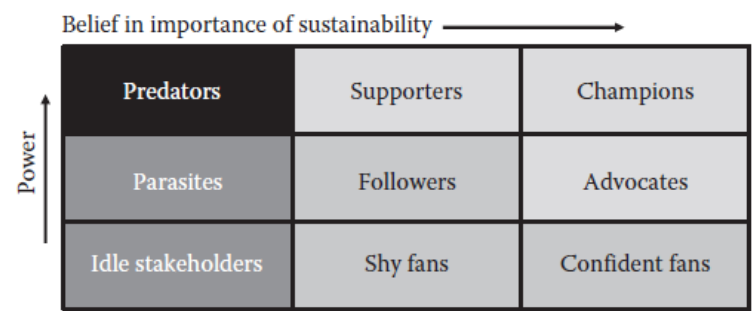


Figure 4.18. Power-Sustainability Support Matrix. Source: Maltzman & Shirley, 2016.

Predators are those who have high power and not only don't care about sustainable solutions but also attack and destroy the long-lasting solutions. *Parasites* are the people with a portion of power and don't support sustainability. *Idle Stakeholders* are the ones with very low power and, at the same time, have no interest in sustainability and don't promote sustainability nor harm it. *Shy Fans* are the project technicians with skills and knowledge that do not actively defend sustainability issues but also do not harm them, as they lack interest or motivation. *Followers* have medium power and are ready to support sustainability if conditions pertaining to their own interests are met, as they tend to follow the balance of power in the project environment. *Confident Fans* have no influence at all but openly support sustainability advocating for long-term solutions. *Supporters* have high power and medium support to sustainability. *Advocates* have medium power and high-level support to sustainability along with sustainable knowledge and skills. *Champions* are those people who devote themselves to sustainable solutions advocating and influencing the high power in an organization.

Project communication management includes the processes required to ensure timely and appropriate generation, collection, distribution, storage, retrieval, and ultimate disposition of project information (Tharp, 2012). Effective communication, that includes project reporting, presentation, records, and lessons learned, ensures that the project stakeholders are informed about the sustainability aspects of the project. The project manager should take additional time when communicating information about the *greenality* of a project. Stakeholders and communication management includes actively managing the expectations of stakeholders to increase the likelihood of project success, addressing potential concerns that need to be discussed, clarifying, and resolving issues (Tharp, 2012).

4.5.4 Procurement Management

Procurement management refers to contract management and those processes to purchase or acquire the products, services, or results needed from outside the project team to perform the work. As project managers look at beyond toward sustainability, the 'green' considerations may include where and how the

raw material are sourced, what the waste from using the material is, the lifecycle of the material after the project, the environmental profile of suppliers (Snoey, 2013). Management should encourage the project manager and team to choose green suppliers and vendors. Although the cost of the equipment and services from greener suppliers may be higher, the following benefit offsets the additional cost when taking into consideration the value of corporate social responsibility (CSR) and the improved reputation from the stakeholders' perspective (Maltzman and Shirley, 2010, 100). Apart from evaluating the marketplace conditions as well as the suppliers and their past performance or reputation, it is important to assess suppliers about resource use, impact on climate change, impact of ecosystems throughout the product's supply chain, and impact on human health (Tharp, 2012).

4.5.5 Cost Management

Cost management involves planning, estimating, budgeting, and controlling costs of a project with the purpose of completing the project within the approved budget. Project managers need to account for costs associated with environmental concerns: these may include the cost of compliance to regulatory or legislative aspects or the cost of green design and production. Maltzman and Shirley (2010) suggest the introduction of *greenality*, defined as “the conformance to a set of environmental and sustainability objectives set for the project” and, as such, it is associated with costs – the same as the costs of quality: prevention costs, appraisal costs, and failure costs. Earned Environmental Value Management (EEVM) can be introduced as part of a common set of objectives tools used to monitor and control project *greenality*. Earned environmental value (EEV) is used specifically to determine if there is any variance in the *greenality* aspects of the project (Maltzman & Shirley, 2010, 129).

4.5.6 Risk Management

Risk management comprises the processes of risk management planning, identification, analysis, responses, monitoring and control of a project. With the

integration of sustainability into project management, the risk assumes a broader meaning as risks caused by environmental problems or social discontent may arise, such as delays and stoppages, negative publicity, threats to operating license, significant unforeseen expenditures, reputational damage (Tharp, 2012). In general, risks are future events or outcomes that can be favorable – these are called opportunities – or unfavorable – called threats. Identifying the potential negative *greenality* risks and areas for the green project manager to take advantage of opportunities (positive risks) is crucial.

4.5.7 Benefits Realization Management

Benefits realization management (BRM) is an assessment of the successful integration of sustainability into the portfolio, its programs, and its projects. Although the terms benefit and value are often used interchangeably, there is a difference in their meaning in project portfolio management context. A benefit is “a gain realized by the organization and beneficiaries through portfolio, program, or project outputs and resulting outcomes” (Project Management Institute, 2018, 7), whereas value is “the net result or realized benefits less the cost of achieving these benefits and it may be tangible or intangible” (Project Management Institute, 2018, 7). Benefits are the positive results of strategic goals and organizational objectives. The full and successful integration of sustainability into a company requires planning, managing and keeping track of the benefits in order to realize the set organizational objectives and optimize organizational value. As organizational goals represent the drivers for commissioning portfolios, programs, or projects, the planned benefits that are aligned with strategic goals are one of the major factors to consider.

The BRM framework – shown in Figure 4.19 - is an integrated set of governance and management practices designed to define, develop, deliver, and sustain planned benefits derived from the outputs of portfolios, programs, and projects (Project Management Institute, 2018, 25).

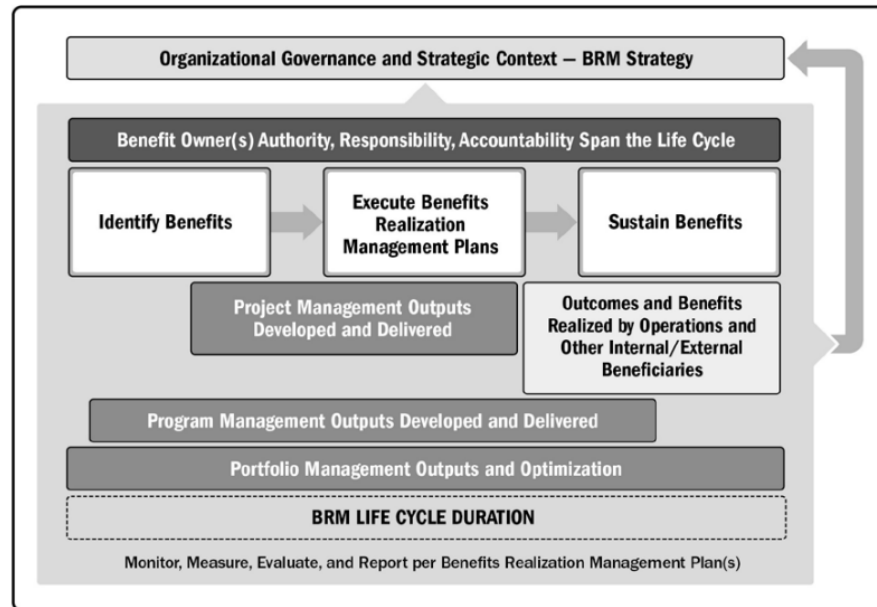


Figure 4.19. Benefits Realization Management Framework. Source: Project Management Institute, 2018.

There are three main phases of BRM lifecycle. The first one is the identify stage, in which benefits to pursue are determined, defined, and organized. Benefits are identified according to the organizational strategic objectives and structured in the Benefits Register, shown in Figure 4.20.

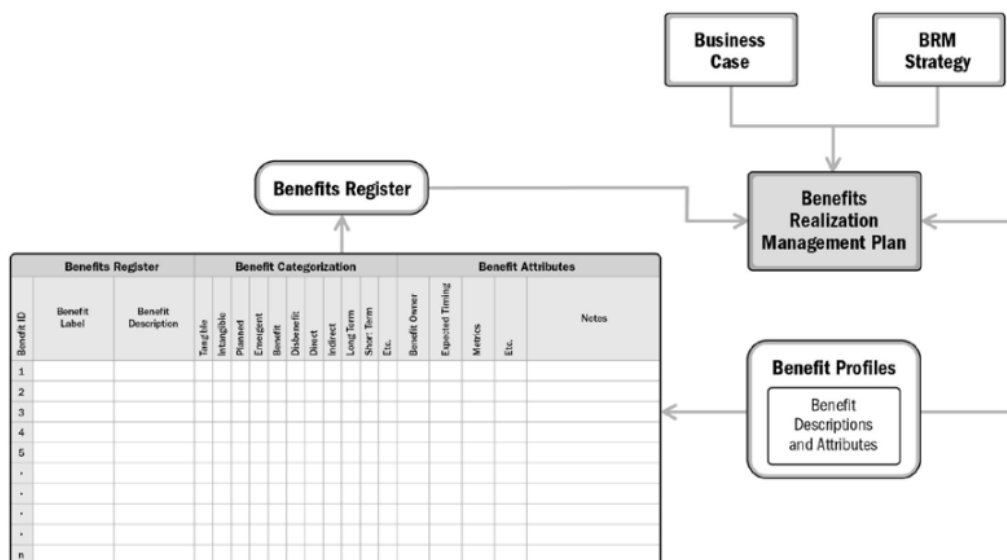


Figure 4.20. Benefits Realization Management Identify Stage. Source: Project Management Institute, 2018.

The second phase is the execute stage, in which portfolios, programs, and projects are planned to deliver the realized planned benefits. It is crucial that the planned benefits are clearly communicated to all stakeholders and the projects, programs and portfolios selected are relevant, aligned and produce the right outputs for the planned benefits.

Finally, the sustain phase consists of the ongoing activities performed by the benefit owners and beneficiaries and ensures the sustainment of benefits achieved through portfolios, programs, and projects. Benefits realization management ensures that all benefits linked to the projects, programs, and portfolios' outcomes are clearly structured. Managers are able to keep track and measure them and the sustainability goals are more likely to be achieved.

4.6 CASE STUDY: PATAGONIA

When thinking of full integration of sustainability into a company, Patagonia is the first business that comes to mind. Patagonia is an American retailer of outdoor clothing, based in Ventura, California. Its estimated revenue for 2022 is 1.5 billion USD. Patagonia has always embraced environmental and social responsibility since its foundation in 1973, but the most impactful action has been taken in August 2022. The founder Yvon Chouinard has transferred his ownership of Patagonia, valued at about \$3 billion, to a specially designed trust and a nonprofit organization (Gelles, 2022). They were created to preserve the company's independence and ensure that all its profits are used to combat climate change and protect underdeveloped land around the planet. The voting stocks, equivalent to 2 percent of the overall shares, were transferred to the newly established entity, known as Patagonia Purpose Trust, that will be overseen by members of the family (Gelles, 2022). It is intended to ensure that Patagonia maintains its commitment to be a socially responsible business. The other 98 percent of Patagonia, its common shares, were donated to a newly established nonprofit organization called the Holdfast Collective, that will use the funds to combat climate change (Gelles, 2022).

Chouinard wrote that Patagonia's sustainability journey started small: "We started with our products, using materials that caused less harm to the environment. We gave away 1 percent of sales each year. We became a certified B Corp and a California benefit corporation, writing our values into our corporate charter so they would be preserved. More recently, in 2018, we changed the company's purpose to: We're in business to save our planet." (Cahill, 2022). As a matter of fact, since 1985, Patagonia has given away 1 percent of sales to the preservation and restoration of the natural environment.

Patagonia website clearly states that the climate crisis is an existential threat and being a carbon neutral company is not enough anymore. This is why 89 percent of their fabrics are made with preferred materials, 100 percent of their down is responsibly sourced, 100 percent of the virgin cotton in their clothes is grown organically (Patagonia, 2022). Patagonia has created a new metric, the Environmental Profit & Loss, that calculates the carbon, water and waste costs of every item sold and identifies and prioritizes meaningful improvements while stopping making styles until their impact can be lessened. Moreover, 100 percent of stores and offices throughout North America use clean energy and Patagonia is financing energy and carbon audits for global partners to improve energy efficiency, implement renewable energy off-site and on-site, and reducing coal and other carbon-intensive fuels used in the manufacturing. As if this was not enough, Patagonia seeks to protect nature through projects and partnership, invests in community power to incentivize the transition from fossil fuels to renewable energy, supports and strengthens the movement and groups working to slow climate change.

Over the years, Patagonia has also built a robust social-responsibility program that analyzes and manages the impacts the business has on workers and communities along the supply chain. A few of the programs developed by Patagonia are Living Wage program, Migrant Workers program, Fair Labor Association program, and many more.

Patagonia is the perfect example of full integration of sustainability into a company, from strategy statement to materials used and full commitment to environmental and social matters.

5. CHANGE MANAGEMENT: THE TRANSITION TO THE FULL INTEGRATION OF SUSTAINABILITY

The Project Management Institute (2013) defines change management as “a comprehensive, cyclic, and structured approach for transitioning individuals, groups, and organizations from a current state to a future state with intended business benefits”. This chapter outlines the change management process necessary to transition an organization from a current state - see Chapter 3 - to a future ideal state in which sustainability is fully integrated into the company, from the strategy development to the project management practices - see Chapter 4. The focus, however, is not on every aspect of an organization, including ongoing operations and value proposition design, but rather on the Project Portfolio Management and its related links in a company. The main assumption of this thesis is that the organization’s strategy bends toward sustainability - considered as Triple Bottom Line meaning people, planet, and profit - as the main driver for the company’s success.

Kristina Kohl (2016) in her book “Becoming a Sustainable Organization: A Project and Portfolio Management Approach” states that adopting a company-wide sustainable strategy requires a sustainability champion to drive the agenda forward and a well-conceived plan to demonstrate correlation between the agenda and the business value. These champions must demonstrate alignment between sustainability goals and the business mission. Although much research has been done on how to manage change and many models exist, the general guidelines suggested by the Project Management Institute in the book “Managing Change In Organizations: A Practice Guide” (2013) for an effective change management

process focusing on portfolio, program, and project management are the following:

- Formulating the change: identifying the need for change, assessing readiness for change, and delineating the scope of change.
- Planning the change: defining the change approach, planning stakeholders' engagement, transition, and integration.
- Implementing the change: preparing the organization for change and delivering project outputs.
- Managing the change transition: integrating the change outputs into business operations, keeping track of the adoption rate, measuring outcomes and benefits, and adapt the change plan according to the needs.
- Sustaining the change: communicating to stakeholders, consulting, conducting activities to sustain the change, and measuring benefits realization.

5.1 BARRIERS TO ADOPTION

Despite the benefits that integrating sustainability brings to the organizations, it's usually hard to implement sustainability strategies with a successful change management plan. Kristina Kohl (2016) lists some of the reasons why adopting sustainability is not always easy and immediate. First of all, leadership must consider many projects with limited resources and, too often, sustainability is seen as a compliance aspect of the company rather than as adding business value activity. Moreover, integrating sustainability within an organization means transforming a company deepening into the organizational processes and procedures. Since, this huge change may require the rethinking of the business model and redesign of the current system, C-suite members often feel that this change is too much for the company that does not have the capacity or the capability to do it. The Project Management Institute (PMI) also provides an overview of the typical barriers to change in a company: lack of a sponsor, lack of commitment to funding and/or resources, cultural resistance to change due to lack of trust or competencies and complex bureaucracy, failure to build change

readiness, insufficient time allocated to change, poor vision of the future, poor access to technology by all stakeholders, and poor measures or measurement processes.

Another barrier that may prevent the successful full integration of sustainability within a company at all levels, including portfolio, program, and project management, consists of the short-term perspective that the area of project management notoriously has. As a matter of fact, project management methodologies and frameworks are mainly focused on the so-called Triple Constraint - Scope, Schedule, and Budget - and project managers usually do not take into consideration the long-term benefits and result of the product or service resulting from the project once it is closed. Project manager's mindset is usually set to be short-termed, having ended the project within budget and schedule as an objective. On the contrary, a sustainability perspective is focused on the long-term results. To embed sustainability, the focus must continue also after the completion of the project; the benefits, the impact, and the lifecycle that the products and services generated by the project have must be measured and taken into account.

5.2 BUILDING THE BUSINESS CASE FOR SUSTAINABILITY

A meaningful business case is crucial to improve the acceptance of the transformation toward a more sustainable business strategy. The change champion must prove the benefits of a sustainable strategy, including cost savings, improved compliance, competitive advantage, improved financial returns, and greater access to capital. As Deland (2009) states, companies need to integrate sustainability into their business for the benefits they can achieve. Among the tangible benefits, the most important ones are lower operational and project costs, higher revenues, lower lending rates, lower insurance rates, lower financial and operational risk, reduced liability, increased innovation, as new produces, process and materials are always sought to be sustainable (Deland, 2009). Integrating sustainability also guarantees intangible benefits: higher employee productivity, dedication, trust and involvement, more easiness to do business in communities of operation, more

reactiveness to new laws and regulations, avoidance of adversarial relationship with activist groups and government (Deland, 2009).

Implementing a sustainability strategy means considering not only environmental and social metrics but also economic metrics; therefore, when recommending this transition, it is important to assess the long-term impact of management decisions, demonstrating the business value that the sustainable strategy creates. The reputational and brand risk is reduced since the likelihood of having an organization's brand tied to a supplier labor violation is reduced. Furthermore, sustainably creating a product or service has more appeal to the green consumers and may result in reduced costs from resource savings. Benefits include identifying opportunities for costs and resource savings, providing credible information to customers about the environmental, social, and governance (ESG) impact.

Integrating sustainability creates value since it focuses on aspects that drive opportunity, mitigate risks, reduce resource utilization, leverage cooperation and collaboration, and create a more productive and effective workplace, thanks to its consideration of local and global communities, resource scarcity, air quality, and the health and happiness of employees (Kohl, 2016, 22). A sustainable strategy creates positive environmental, social, labor, human rights, and governance impacts while mitigating risks and generating long-term profitability. Furthermore, an increasing number of investors and stakeholders demand transparency on environmental, social, and governance (ESG) issues. Consumers worldwide are starting to demand that companies implement programs to sustain the environment and communities. An EY research (Yeo & Thung, 2020) states that these consumers are typically of the millennial generation, meaning born between 1980 and 2000. According to L.E.K.'s Sustainability Consumer Survey report (Boyd-Boland & DeVestern, 2022), nearly half of consumers claimed to have switched brands or products due to concerns about sustainability, the environment, or ethics. Consumer products marketed as sustainable are delivering more than half of overall market growth (Goddard, 2022).

Research (Yeo & Thung, 2020) shows that an increase in awareness also impacts the workplace: a positive social impact correlates with higher job

satisfaction, and employee satisfaction is positively correlated to shareholders returns.

5.2.1 Value Creation of Long-Term Orientation

Carole Flammer and Pratima Bansal (2017) conducted research about the value created by a long-term orientation, using a regression discontinuity design (RDD). The objective is to estimate the effects of increasing executives' long-term incentives on firm value, operating performance, investments in innovations and stakeholder relationships. Their study suggests that companies benefit from a long-term orientation, which is value-enhancing. By adopting longer time horizons, companies are able to contrast the short-sighted tendencies of their management team, that may be overly focused on short-term performance; moreover, companies that adopt a long-term orientation are able to choose from a wider set of corporate strategies, enabling the investments in innovation and stakeholder relations and thus maximizing firm value.

5.2.2 Financial Performance and Competitive Advantage

Adoption of a sustainable strategy provides a competitive advantage generating financial performance. The Business and Sustainable Development Commission estimates that achievement of the UN Sustainable Development Goals could result in at least US\$12t worth of market opportunities a year for the private sector by 2030 (Sobir, 2020). As EY's author Andre Toh states, corporate executives will be able to take advantage of these opportunities and generate new revenue streams for their companies if they integrate ESG (Environmental, Social, and Governance) considerations as a core driver of their corporate strategy and differentiate their organizations within the global sustainability ecosystem. Additionally, due to the growing importance of social and environmental considerations in consumers' purchasing decisions, sustainable companies may now charge higher prices on their products and services (Toh, 2021). At the same time, including ESG factors into corporate decision-making often results in operational and process efficiency, which boost profitability. This happens thanks

to better resource management policies to reduce and eliminate waste, sustainable supply chain management practices to decrease the environmental impact and costs, and adoption of a culture of innovation.

An EY analysis is illustrated in Figure 5.1, that plots the comparison between the top sustainable corporations in the world based on Corporate Knight's 2020 Global 100 ranking against their respective industry medians when considering the profitability. From the chart, it's clear that sustainable companies outperformed their industry peers on gross profit, EBITDA, EBIT, and net profit metrics.



Figure 5.1. Sustainable companies compared to industry peers on key profitability metrics. Source: Andre Toh, 2021.

The same article by Toh (2021) also claims that higher ESG-rated companies have experienced a lower idiosyncratic risk - defined as “inherent risk involved in investing in a specific asset or investment” (Corporate Finance Institute, 2022) - compared to those that had a lower ESG rating, probably thanks to a better risk management and compliance standards. Furthermore, companies that focus on corporate sustainability tend to be less vulnerable to systematic risk - defined as “part of the total risk that is caused by factors beyond the control of a specific company or individual” (Corporate Finance Institute, 2022).

5.3 CHANGE MANAGEMENT TEAM

The roles needed for a change management process depend on the structure of the organization, the industry, and the starting point of sustainability integration of the company. Although a one-fits-all change team structure does not exist, it is possible to identify a few roles that are in general necessary for a successful change management.

A *change champion* is responsible for communicating the vision for the organizational change and is involved at all stages of the change management process, from the initiation to the implementation of the change. Change champion's fundamental roles are to ensure that the right skill sets are in place at the right time and to keep people focused and directed toward the end objectives.

A *change manager* (or *coordinator*) ensures that all change management activities are successfully accomplished and is responsible for the change governance.

The *project change team* is composed of the team members who perform the day-to-day tasks throughout the change management process, gather feedback, and monitor the efficiency and effectiveness of the change.

During the change management process, departments internal to the organization play a crucial role in the successful implementation of the change: human resources department ensures the availability of the right skills set and training, and the marketing department helps to communicate the ongoing change to all employees and stakeholders and spreads awareness and knowledge about sustainability. Furthermore, external subject matter experts may be required to train employees and spread knowledge about sustainability issues and integration.

5.4 CEO AND C-CUITE PERSPECTIVE

Gaining CEO and C-Suite support is crucial to a sustainable transformation. Change champions who are in charge of the transition must support their recommendations with research and case studies providing tangible evidence of organizations that have adopted sustainable strategies and have

become leaders in their industries outperforming their competition. In this way, senior leadership gains perspective on the benefits of sustainable strategy on business value creation and the sustainability champion has the opportunity to propose a full sustainability agenda. Linking sustainability to business value creation while quantifying the value is key to move sustainability forward within an organization. The value that sustainability can bring to a company consists of creating innovation and competitive advantage or engaging customers and employees. As Kristina Kohl (2016) states in her book, often, companies that want to start their sustainability journey identify environmental projects; however, while environmental projects bring benefits, these projects do not impact core operational performance or do not improve financial performance, therefore do not garner sufficient managerial support. Kohl (2016) suggests that to embed sustainability within an organization it's crucial that projects include metrics that measure the contribution toward business goals: sustainability projects must align with core business values and portfolio criteria.

CEOs are incentivized to invest in sustainability because of market factors such as brand, trust, and corporate reputation as well as opportunity for revenue growth and expense reduction. Furthermore, CEOs are also driven by consumer and customer demand: increasingly, customers and consumers are seeking sustainable solutions to support their own personal views on the environment and society. Another important factor is employee engagement: employees are influential stakeholders whose engagement, retention, and attraction are crucial to keep the company productive. CEOs must become aware that collaboration with all stakeholders, including consumers, employees, communities, and governments, is needed in order to meet the environmental, social, and governance requirements that the world is requesting.

5.5 IDENTIFYING AND ENGAGING STAKEHOLDERS

To begin the change management process to integrate sustainability, organizations must focus on stakeholders' identification, needs assessment, and requirements gathering. The stakeholders' engagement process is not static; rather

it is dynamic and iterative, with feedback being provided to and from stakeholders. Thanks to this ongoing relationship between the organization and the stakeholders, trust is developed over time and the integration of sustainability is facilitated. Engaging stakeholders may help management maximize opportunities and minimize risk: stakeholders may provide useful insight related to new business opportunities, improve processes, generate cost saving and sustainable solutions.

The change management team must ensure that all stakeholders are identified, and a stakeholder engagement plan is developed. Internal stakeholders include the sponsor, the owner, the change project team, the business units, the C-suite, all employees. External stakeholders include clients, consumers, suppliers, non-governmental organizations (NGOs), environmental groups, community groups, or government agencies.

In stakeholders' management, it is crucial to identify the stakeholders' requirements and needs that the organizational change plan is going to address. Once these requirements are understood, the change management team should align them with the organizational strategy. Translating stakeholders' inputs into goals and metrics facilitates communication, accountability, measurement, and transparency with both internal and external stakeholders.

Kristina Kohl (2016) plots stakeholders in a matrix according to their potential for engagement and their relevance, as shown in Figure 5.2.

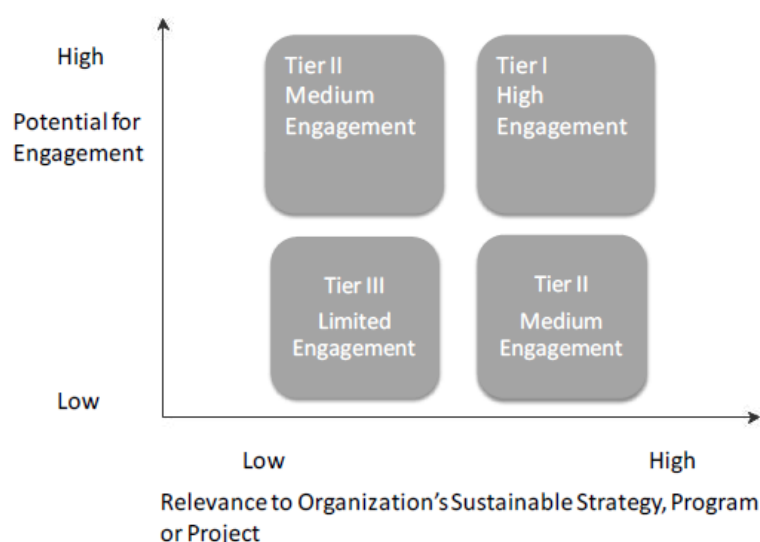


Figure 5.2. Stakeholder Engagement Matrix. Source: Kohl, 2016.

High-engagement (HE) stakeholders are well-organized, influential, and well-informed; they have a meaningful impact on the change management plan. Since the goal is active participation from this group, the engagement is crucial and must include regular and open dialogue and collaboration. Medium-engagement (ME) stakeholders fall in two different groups. Those who are in the upper left quadrant are highly available for interaction but have less impact on the change; these stakeholders want to be informed. Those who are in the lower right quadrant aren't easily engaged, but their actions can impact the sustainability integration program. It's crucial that these stakeholders are engaged through clear communication. Limited-engagement (LE) stakeholders may require access to information but only on a limited basis.

Some stakeholders may be in favor of this change and may even provide recommendations about the integration of sustainability, others may be indifferent or even against it. Different types of people in an organization deal with change in different ways. Maltzman and Shirley (2016) identify the different perspectives, from the "No Commitment" people, those who may passively or actively resisting change or denying reality of the need for change, to the opposite "Make It Happen", with the "Help It Happen" in between. While a few stakeholders may be champions advocating and helping to move the sustainability forward, some will ignore the change, others may block progress trying to stop the change management plan.

In order to engage employees, the change management team needs to promote the global sustainability vision, so that employees identify personally with the sustainability goals and objectives. Engagement rises as employees better understand their role in the process, the impact they can have, and how the sustainability change management plan's goals align with the overall corporate mission.

5.6 PROJECT MANAGEMENT TECHNIQUES FOR SUSTAINABLE STRATEGY DEVELOPMENT: THE SUSTAINABILITY JOURNEY

As an organization is willing to integrate sustainability within the strategy, project management serves as a means to implement the change. Kristina Kohl (2016) suggests three different stages of the sustainability journey through project, program and portfolio management and they are represented in the Figure 5.3.

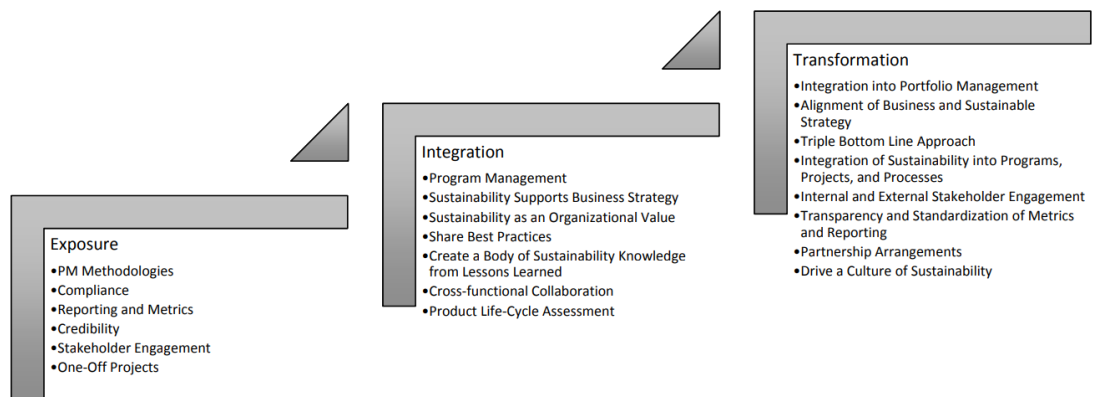


Figure 5.3. Project, Program, and Portfolio Management's Impact on the Sustainability Journey. Source: Kohl, 2016.

The first phase is the exposure stage and management usually focuses on compliance projects. In this phase, it is crucial to demonstrate the impact of sustainability-based projects on the organization's strategy business mission. Project management techniques enable the successful process of integrating sustainability into an organization. Incorporating project management methodologies into sustainability projects provides better engagement, implementation, and outcomes (Kohl, 2016, 92).

The second stage is the integration phase, in which sustainability becomes an integral part of the business process. Project and program managers must integrate the organizational sustainability vision into operation, making sure that processes, products, and people comply with sustainability principles. In this phase, it is important that all business policies and processes are adapted to have a meaningful positive impact and to provide suppliers with a sustainability code of

conduct. To become a sustainable company, all companies involved in the supply chain must be compliant with sustainability principles. During this phase, Kohl (2016) suggests implementing a body of knowledge, such as a Sustainability Office (SO) or a Program Management Office (PMO) to provide foundational resources for sustainability programs and projects. The purpose is to provide best practices, policies, protocols for projects to facilitate the alignment between sustainable strategy and business process.

The third phase is the transformation stage and sustainable and business strategies converge into a unified strategy: sustainability becomes an integral part of the strategic planning process. Portfolio strategy and component selection align to support sustainability. This phase aims at establishing portfolio criteria to align sustainable and business strategy; portfolio management becomes, therefore, the framework for aligning standards and the methodology for choosing the most impactful programs and projects for funding approval.

5.7 CREATING A CULTURE OF SUSTAINABILITY

Culture is defined as the tacit social order of an organization, as it shapes attitudes and behaviors in wide-ranging and durable ways (Groysberg et al., 2018). Culture expresses goals through values and beliefs and guides activity through assumptions and group norms. Culture has a huge impact on an organization's long-term success and successful performance. When dealing with change, it is crucial to recognize that different organizations have different cultures, but also different areas or departments within a company have their own way of doing things. Creating a culture of sustainability takes time, effort, and significant change management, but it is necessary to further embed sustainability within the organization's vision. It is crucial that all levels of employees embrace the vision and make it part of their roles and responsibilities. Top management establishes the sustainability agenda, but project managers are the ones who play the crucial role in creating the organizational change required for sustainability adoption.

Research shows that culture accounts for 20-30 percent of the differential in corporate performance between companies with strong cultures and their peers with less impactful cultures.

In their guide, Boris Groysberg et al. (2018) identify two primary dimensions that apply when analyzing an organization's culture: people interaction and response to change. What the former aspect concerns, an organization's culture leans toward people being highly independent when autonomy and individual action are valued; on the other hand, when employees are highly interdependent, people tend to collaborate, and such cultures emphasize integration. Regarding the response to change of a company, some cultures emphasize stability prioritizing maintenance, rules, and hierarchy, whereas others emphasize flexibility, adaptability, innovation, openness, diversity, and a longer-term orientation. Figure 5.4 shows eight types of style identified after plotting different cultures depending on the different response to change and people interaction.

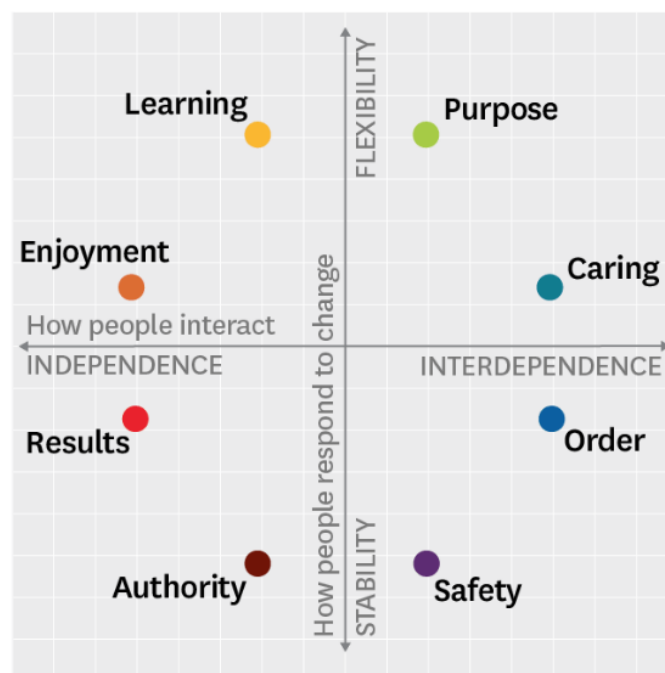


Figure 5.4. Culture Framework. Source: Spencer Stuart. From: "The Leader's Guide to Corporate Culture" by Groysberg et al., 2018.

- *Caring* focuses on relationships and mutual trust and, in such cultures, the environment is collaborative and welcoming. Leaders emphasize sincerity, teamwork, and positive relationships.
- *Purpose*'s main aspects are altruism and tolerance: employees are focused on sustainability and global communities and try to achieve a better long-term future for the world.
- *Learning* is characterized by creativity and open mindedness and leaders emphasize innovation and adventure.
- *Enjoyment* is a culture in which employees are united by stimulation and excitement and spontaneity is emphasized.
- *Results*' culture is focused on achievement and winning; as a matter of fact, leaders drive employees to be top performers and accomplish their goals.
- *Authority* is a culture in which decisiveness, strong control, confidence, and dominance are the main characteristics.
- *Safety* is characterized by caution and predictability: leaders emphasize being realistic and planning.
- *Order* is focused on respect, structure, and methods. Employees are highly cooperative, and leaders emphasize shared procedures.

Mapping organizational cultures along the two dimensions - independence to interdependence and flexibility to stability -, it is possible to analyze the starting point of a company's culture and shape it to implement a sustainability culture among all employees. Having an organization that is characterized by one or more styles is usual and, while all styles have some benefits and drawbacks, there are some cultures that are preferred in order to implement the change and establish a culture leaning toward sustainability.

After having analyzed and understood an organization's culture along with the strategic choices and having formulated the culture target, it is important to translate the target into organizational change priorities. The culture of an organization is expressed through the actions and vision of both leaders and employees; therefore, it is also crucial to make sure that the two converge. In order to adopt a sustainable business strategy, organizational values and principles must integrate the values of sustainability: environmental safekeeping, corporate

social responsibility, and governance are very much impacted by the way people in an organization act and work.

The first step to create a sustainability culture is to have sustainability as an organizational pillar supported by senior management's vision: sustainability needs to become an integral part of organizational culture, translating vision into employees' decisions, actions, and behaviors. This means that policies, systems, processes, and priorities need to be changed accordingly. Furthermore, engaging stakeholders on sustainability issues is another fundamental aspect aiming at developing a sustainable strategy. Demonstrating the benefits that sustainability brings to the organization, to the environment, and the community to the internal and external stakeholders enhances the long-term value and further embeds sustainability values within the organizational culture. These benefits include positive impact on natural resources, less carbon emissions, lower resource consumption, cost reduction, higher contract awards.

The key to become a sustainable organization is alignment between organizational values and sustainable strategy. Identifying the drivers for sustainable change facilitates selecting programs and projects and defining metrics to measure progress. The table presented in Figure 5.5 suggested by Kristina Kohl (2016) proposes an example of a sustainability matrix, in which for every aspect concerning sustainability, goals, targets, drivers, and metrics are identified.

Material Issues	Goals	Target	Driver	Metric (annual)
ENVIRONMENTAL CAPITAL				
Climate change risk	Zero GHG Emissions by 2020	10% Reduction	Energy Usage	GHG from Fuel Utilized
Environmental spills/accidents	Zero Environmental Accidents by 2017	Reduction: 25% Year 1, 50% Year 2, 75% Year 3, 100% Year 4	Accidents/Errors	Occurrence/Unit of Product
Water usage	Water Education	50% Employee Training Year 1	Facility Water Usage	Water/Unit of Product
Energy usage				
Fuel usage				
GHG emissions				
Waste management				
Biodiversity				
SOCIAL CAPITAL				
Stakeholder engagement	Improved Internal Stakeholder Satisfaction	25% Rating Improvement	Stakeholder Engagement Plan	Annual Employee Survey Results
Community relations	Increase Community Investment	20% Increase in Volunteer Hours	Community Programs/ Voluntarism	Community Volunteer Hours/ Employee
Facilities impact				
Customer impact				
Customer safety				
Product safety				
Marketing message				
Market access	Increase Service to Underserved Market	10% 2016, 20% 2017	New Business Opportunity	# Under Served Customers/Total Customers
Client privacy	Zero Data Breaches	Reduction: 50% 2017, 75% 2018, 100% 2019	Personal Information Protection	# Data Security Breaches/Annum
Underserved markets				
HUMAN CAPITAL				
Diversity & inclusion	Increase Board Diversity	Women Comprise 25% of Board 2020	More Diverse Slate of Board Candidates	% of Women on Board
Training & development				
Recruitment & retention				
Compensation & incentives				
Labor practices				
Health, safety, & wellness				
Child labor				
BUSINESS PROCESS				
Economic viability				
Incorporating externalities				
Research & development				
Product's social impact				
Circular economy	End of Life Product Recapture	100% by 2020	Customer Health and Safety	% Product Taken Back for Reuse/ Disposal
Packaging				
Pricing				
Product quality				
GOVERNANCE				
Regulatory & legal requirements				
Policies & codes				
Ethics	Compliance with Regulation	100% of Employees Trained by 2018	Employee Education and Compliance	Annual Amount of Regulatory Fines # of Settlements
Investor relations				
Board composition				
Executive pay				
Political lobbying				
Sourcing policies				
Value chain standards	Tier 1 Supplier Code Compliance	100% Tier 1 Supplier Compliance by 2020	Tier 1 Suppliers' Policy and Compliance Protocols	% Suppliers Participating in 3rd-Party Audits
Supply chain engagement				

Figure 5.5. Culture of Sustainability Matrix. Source: Kohl, 2016.

To embed sustainability, programs and projects must be selected, chartered, planned, and implemented according to the identified targets and goals. To facilitate and improve the accountability, goals that are “SMART” effectively state and quantify what the company wants to achieve. SMART is an acronym that means:

1. Specific: clear and unambiguous
2. Measurable: clearly defined and meaningful
3. Achievable: reasonable and attainable within the scope, action-oriented
4. Relevant: relate to the issue
5. Time-bound: set a timeframe for completion.

Maltzman and Shirley (2010) suggest two more aspects to consider when choosing objectives in order to be SMARTER about green change management.

- Environmentally friendly
- Responsible

These two latter concepts want to focus on the fact that it's important to consider the effectiveness of the processes of the project itself, its own waste and inefficiencies, and the end product and its disposal or reuse.

5.8 CHANGE INTELLIGENCE AND LEADERSHIP STYLES

Research shows that as many as 70 percent of major organizational changes fail to achieve their business objectives (Trautlein, 2014). It is therefore crucial that change agents develop their leadership behaviors in order to manage successful and sustainable change. Barbara Trautlein defines change intelligence (CQ) as “the awareness of one’s own change leader style and the ability to adapt one’s style to be optimally effective across a variety of people and situations”. The three dimensions of the CQ model are shown in Figure 5.6 and are leading from the heart (people-focused), the head (purpose-focused), and the hands (process-focused) depending on each one’s propensity. The combinations of leading from the heart, head, and/or hands allow to identify seven change leader styles: coach, champion, visionary, driver, executor, facilitator, and adapter.

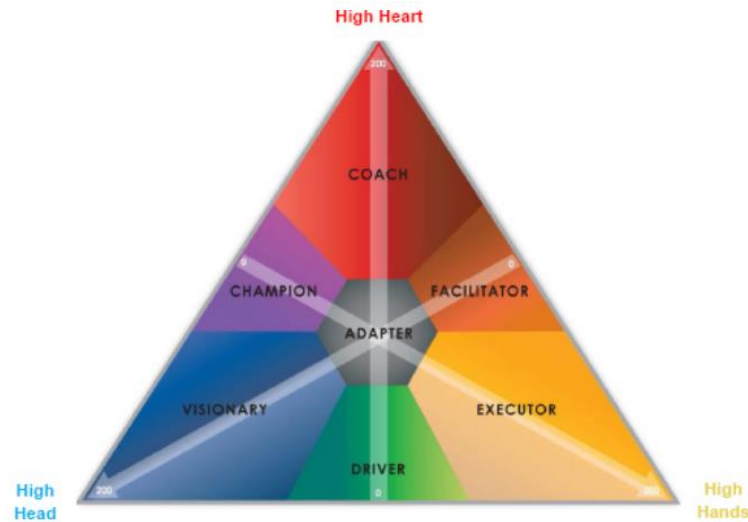


Figure 5.6. Seven Styles of Change Intelligence (CQ). Source: Trautlein, 2014.

Every leadership style has different strengths and weaknesses, but the most effective change leaders start with the heart, engage the brain, and help the hands move in positive new directions. In order to lead change, Trautlein suggests that the best way to lead is to ADAPT:

- Acknowledge: understanding one's style and the attributes of the change leader style.
- Deploy: seeking situations that bring out the best and allow to use the strengths in the best way.
- Avoid: avoiding neglecting the drawbacks and being moderate about the most preferred strengths.
- Plan: learning to be more versatile.
- Team: partnering with others that are stronger in other complementary attitudes.

5.9 CHANGE READINESS ASSESSMENT

Change readiness refers to an optimal state of acceptance demonstrated by an organization. The change readiness assessment measures the reality of the current organization in relation to the future state. Change readiness considers three key drivers that impact readiness (Combe, 2014):

1. Cultural readiness: the degree of alignment between cultural norms and the proposed change. It is crucial to assess the current values of an organization, including trust, respect, transparency, accountability, consistency, collaboration, cohesion, and sharing to understand where the company starts. Furthermore, the cultural assessment involves analyzing the organization structures, decision-making systems, policies. Chapter 5.7 further elaborates on how to create a culture of sustainability.
2. Commitment readiness: the degree of resolve and ability of the organization, through its leaders, to see the change through to successful and sustainable completion within the organization's overall strategic agenda. The commitment assessment helps to measure the confidence in the organization's ability to apply its capacity to the envisioned integration of sustainability and involves six areas, as shown in Figure 5.7.

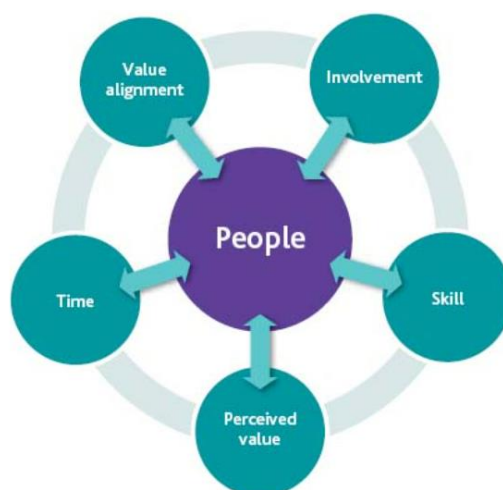


Figure 5.7. Elements of Commitment in Change Readiness Assessment.
Source: Combe, 2014.

The questions that contribute to assess the commitment are listed in Table 1.

Value Alignment	Does the change support or enhance the organization's ability to live up to values on which its good reputation is based?
Involvement	Are people affected by the change at all levels actively participating in defining what the change is, how it will be implemented, and how its success will be measured? Are those same people accountable for the successful outcomes if the change, and will they benefit personally

	and as groups if the change succeeds?
People	Are all affected people confident of their ability to cope with the change, to contribute meaningfully to the definition of the change and how it is implemented?
Time	Do the people who must contribute to successful implementation, transition and long-term absorption of the change have adequate time to take on this extra work?
Skill	Is there a clear understanding at all levels of the degree and time commitment of knowledge/skill/ability development that will be needed for the change to be successful?
Perceived Value	Is there confidence that the proposed change will offer an opportunity for sustained value for the organization?

Table 1. Questions for Commitment in Change Readiness Assessment.
Source: Combe, 2014.

3. Capacity readiness: the degree to which the organization is able to bring supportive work processes, historical knowledge and experience, current knowledge, skills and abilities, and resources to bear to aid in successful implementation and sustainability of the change. The objective is to understand if organizational resources are ready, willing and able to deliver a successful integration of sustainability into business processes, and to realize sustained benefits. The capacity assessment reviews the elements of people, work processes, technology and support resources, physical resources, organizational systems, and the interaction among them. The elements to assess are reported in Figure 5.8.

	Consider capacity needed in each phase of program or project delivery to: - Implement; - Integrate into the business; and - deliver benefits consistently over time.
People	Implementers, Sponsors, Managers, Operational experts, Impacted staff, Partners
	Knowledge/skills/abilities, Experience, Availability, Organizational structures
Processes	Decision making, Portfolio, Program and Project management, Change management, Strategy development and measurement, Communication
	Familiarity, Complexity, Boundary clarity and coordination, Role clarity, Consistency of use, Efficacy, Skills across organization
Technology/ Support Resources	Software/hardware, Bandwidth, Technical experts
	Familiarity, Experience base, Expertise, Availability, Targeted to need
Physical Resources	Financial, Space, Equipment
	Adequacy, Availability
Organizational Systems	Rewards, Accountability, Knowledge transfer
	Efficacy, Supportive of current goals

Figure 5.8. Elements of Capacity in Change Readiness Assessment. Source: Combe, 2014.

5.10 COMMUNICATION AND TRAINING PLAN

Defining a communication management strategy is crucial to ensure effective information distribution. The key steps of communication management are defining communications objectives, conducting communication analysis, developing communications approach, plan and activities, and delivering and monitoring communications activities. Clearly defining objectives of the communications campaign, while aligning it with the larger organizational communications plans allows the project change management team to integrate strategic messages with tactical messages. The change team must also align communications preparation with insight from stakeholder analysis. Communication management must take into consideration the following:

- Who: stakeholders who will send and receive communications.
- What: intent and consistency of different messages.
- When: alignment to key milestones of the project.
- Where: ideal mix of communications delivery platforms.

- How: delivery methods that suit the message and project phase.

The whole communication delivery is coordinated by the change manager who ensures that communications content is finalized, senders are confirmed, message governance is adhered to, communication delivery is tracked and evaluated, and feedback mechanism is set up.

In terms of training needs, when a change management process is proposed to integrate sustainability, the most-identified areas are developing a culture of sustainability, embedding sustainability into programs and project, and engaging stakeholders and management. While onboarding is an ideal time to explain and demonstrate the culture of sustainability of an organization, the training and development must include existing employees too. Through the process of workforce gap analysis, it is crucial to identify the skill set needed to support the organization's sustainability vision (Kohl, 2016). Thanks to the collaboration with HR, training and development should also involve leaders and managers to meet the new challenges and align with sustainability thinking. Training programs to develop new skills and knowledge must be created for both management and workforce.

6. CONCLUSIONS

The main goal of this thesis was to provide a framework that can guide organizations to integrate sustainability into their business and their project, program, and portfolio management activities through a change management process. The methodology consisted of analyzing the current academic literature and structuring it while providing new insights to the main topics that companies must consider.

The thesis first presented the main problems drivers along with the reasons why the organizations' commitment to environmental and social improvement is necessary. Climate change, that has been proved to be caused mainly by human activities, is provoking extreme weather events and other natural disasters that have caused mass destruction and awful consequences that impacted the life of millions of people. Beside environmental factors, societal and economic implications are constantly changing. The awareness of mental well-being and fair working conditions is spreading worldwide, and companies must invest in environmental, social and governance (ESG) issues to meet new stakeholders' expectations and needs and to have a positive impact on the planet.

The thesis then explained the meaning of sustainability in the business context and, in particular, when related to projects, programs, and portfolios. It is worth mentioning the discussion about success, which is interpreted in different ways, depending on the perspective considered.

The project portfolio management framework proposed by the Project Management Institute (PMI) has the purpose of helping companies manage portfolios. As portfolios link an organization's strategy to the ongoing operations, their role is crucial in integrating sustainability at a project and program level. The current framework, composed of six performance domains, does not include all sustainability aspects that companies must consider. There is currently a gap between the commitment in companies' strategy and the effective ability to

achieve sustainable results; the integration of sustainability tools, practices, and methodologies in project, program, and portfolio management has the potential to fill this gap.

The value that organizations must seek is not only financial, but it should also include long-term non-tangible benefits. A new framework that integrates sustainability matters in every phase of project portfolio management has been proposed by Javed Mohammad and Yu-Chun Pan and it allows to select, analyze, and implement projects in a sustainably conscious way. This thesis focused on sustainability integration in strategy statement, portfolio management, and project management. The goal is that firms implement the processes and tools proposed in order to have a positive impact on the environment as well as contribute to better living conditions of communities.

Finally, the thesis outlined the change management process necessary for a company to transition from the current state to a future ideal state in which sustainability becomes an integral part of each process and activity. Change management consists of the effective change readiness and cultural assessment, stakeholders' management, communication, and training management, and ensures that every phase of the change process is successfully carried out with the support of the top management along with employees' engagement.

Overall, this thesis contributes to the academic literature by providing a usable framework integrated with project management practices as well as the change management process needed to achieve the ideal state of full integration of sustainability into a company. The main contribution is the design of a comprehensive journey that all organizations worldwide should pursue to become sustainable.

6.1 LIMITATIONS AND FUTURE RESEARCH

This thesis presents some limitations. First, it does not consider legal and economic regulations and laws. The research may be further expanded with the incorporation of global as well as continental and national regulations to prove the necessity of sustainable practices within businesses. Moreover, the framework

presented in this thesis may not be functional in all industries. Further research may lead to industry-relevant sustainable processes. The conceptual framework proposed in this research attempts to create a model that has the flexibility to be applied across diverse industries, while keeping in mind that a one-fits-all model can present some criticalities. The framework can definitely be tailored according to the business requirements. Another important limitation is the lack of any empirical work, which is left to future research. As the models have not been tested in real-life scenarios, practitioners, portfolio managers, project managers, change managers can endorse the findings, criticize them, and recommend modifications. Case studies may also be applied to verify the validity of the framework.

Finally, this thesis aims at addressing the initial steps that a company should implement to become more sustainable. Developing trial and testing approaches and incorporating this research with further academic and practitioner insights is left to future developments.

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