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Gap analysis for incorporating sustainability in project management

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Abstract

The concept of sustainability in project management is likely to increase in importance over the coming years. Sustainability issues and the ways in which sustainability considerations may be incorporated in project management are already well documented in academic literature. There still exist a gap between what is suggested in the literature and what is carried out in practice. This article documents a literature review of sustainability in project management and briefly looks into sustainability in PM standards, stakeholder analysis, governance frameworks, performance indicators and measuring schemes. Several authors point out that following their proposals would indicate new paradigms in project management. As these seems not to have been triggered yet, additional research into mental models of projects and sustainability is recommended in order for sustainability to become truly incorporated in project management.

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1. Introduction

Although the terms “sustainability” and sustainable development have been around for a long time, the importance of sustainability in projects is likely to increase over the coming years¹⁻⁴. About a third of the world gross product (the total global GDP) is realised through projects⁵, indicating significant potential impact towards a more sustainable future by incorporating sustainability principles in project management. There are more than 200 publications

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(articles, books, book chapters and conference proceedings) dealing with sustainability and project management. The majority of the publications date from the last five years. The surge might stem from a combination of the field still being emerging and a shift in terminology; “sustainability” or variations of “sustainable” seems to have replaced corporate social responsibility (CSR) as focus have shifted from enterprises and supply chains to projects. Although there has been a large increase in the number of academic articles dealing with sustainability and project management, there seems to be a wide gap between the models, tools and frameworks presented in academic literature and common practice as expressed by project management standards.

This article will focus on projects in general and not on “sustainable development projects” in which some form of sustainable development is the main goal. It opens by briefly presenting the fundamental issues, definitions and important development in sustainability thinking from the 1980’s to the on-going development of the United Nations “Sustainable Development Goals”. It goes on to sum up the findings from a literature review on sustainability and project management. The literature review has been focused on what the PM standards say (PMBok guide, PRINCE2 and the International Competence baseline 3.0), literature on sustainability and stakeholder management, sustainability in project governance and sustainability within performance measurement. Finally a discussion based on the findings is presented to identify what is missing in order to incorporate sustainability perspectives in practical project management.

The literature review has been carried out by conducting searches in Google Scholar and the Thomson Reuters Web of Science. The search terms used were combinations of “sustainability”/“sustainable”/“CSR”/“corporate social responsibility”/“stakeholder analysis”/“stakeholder theory”/“performance measurement”/“performance management” and project management. The results included several systematic reviews of these issues, among them Silvius & Schipper⁶ covering 164 publications regarding sustainability and project management. By incorporating publications from 2014-2015, the number increases by 41.

2. A brief look at the fundamentals of sustainability

Sustainable development has been on the UN agenda for over forty years since the first Conference on the Human Environment in Stockholm, 1972⁷. Much of the literature on sustainability and sustainable development however, traces it’s reasoning to the Brundtland commission’s 1987 report “Our Common Future”. In it, sustainable development is defined as “*development that meets the needs of the present without compromising the ability of future generations to meet their own needs*”⁸. The 1987 report played a pivotal role in turning sustainability from a term primarily used in relation to ecology and “green” issues to a term incorporating economical, social and environmental aspects. The multi-dimensional approach has been central in UN’s work on sustainability and sustainable development throughout the “Earth Summit” in Rio⁹ and the Rio+20 conference. The UN approach and interpretation is integrated in the UN Millennium Goals¹⁰ and the forthcoming UN sustainable development goals.

The case for business and corporations to include a similar multi-dimensional approach was made by Elkington¹¹. In the “triple bottom line”-concept corporations are urged to adapt to a world in which business goals are inseparable from the societies and environments in which they operate. The three dimensions of the concept were dubbed the “Triple-P’s” for *people, planet and profit*. Several authors has since developed the concept further¹², and made the business case for the sustainable corporation^{13,14}. Businesses in various industries have incorporated sustainability in their mission statements and strategies, voluntarily adhere to initiatives like the Global Reporting Initiative, and we have seen the establishment of the benefit-corporation in the US. The “B-corps” must pledge to support some societal or environmental cause in addition to seeking increased shareholder value.

Essentially, sustainability considerations are about trade-offs. The most significant are between the social, ecological and economic dimensions in the short, medium and long term; giving the next generations equal opportunities for welfare and a good life. It is also about the spatial dimension; the local and regional versus the global view. These align with Gareis et al.¹⁵, who also incorporate the “value orientation”. Handling these trade-offs is not straightforward. Applying systems dynamics to model the interaction of factors of social, ecological and economic dimensions (or people, planet profit) Meadows et al^{16,17} stress that these are interrelated and influence each other in complex and surprising ways. The systems dynamics approach to sustainability focuses on resource use and the ability of “the system” to continuously provide them. The logic can be expressed by a handful of principles: (1) Extend the

systems limit in space and time to include consequences (direct and indirect) in the long term and far of places; (2) Consume income, not capital; (3) Reduce risk and uncertainty or value it properly.

3. Sustainability in project management

PMI defines projects as “a temporary endeavor undertaken to create a unique product, service, or result”¹⁸. Projects are the vehicles of beneficial change^{19,20}, the most efficient way of organizing a response when faced with a need. Projects are about creating *something* that did not exist before the project was executed. Considering the estimate of one third of world GDP (gross domestic product) is initiated by projects⁵, the potential impact from properly integrating sustainability considerations in project management is beyond imagination. In this chapter the concept and considerations of sustainability is related to some common tool and processes of project management.

3.1. Sustainability in PM standards

Sustainability is mentioned three times in the PMbok Guide. It is mentioned as a contextual factor that the project manager should be aware of, as sustainability policies and regulations may influence the project. Sustainability considerations are regarded as external to the basic project, but may have to be included, as project success will be evaluated in accordance with the organization’s policies. Eskerod & Huelman²¹ has looked into what PRINCE2²², the PMbok Guide¹⁸ and the ICB International Competence Baseline 3.0²³ say about stakeholder issues and sustainability. It concludes that neither of the three explicitly considers sustainability issues.

The international standardization organization (ISO) is working on a new set of standards for sustainability and resilience, beginning with ISO 371001. It is not directly addressing project management, although the focus on management systems might be applicable to projects as well. The ISO26000 for Social Responsibility is developed for all types of organizations and is not limited to corporations and businesses. The standard is voluntary and is not linked to certification. The seven key principles presented as the roots of social responsibility align with the core of sustainability thinking. These are; accountability, transparency, ethical behavior, respect for stakeholder interests, respect for the rule of law, respect for international norms of behavior, respect for human rights. The standard goes on to present seven core subjects of social responsibility; human rights, labour practices, the environment, fair operating practices, consumer issues and community involvement and development.

3.2. Sustainability in Stakeholder analysis

Applying sustainability thinking to the PMI definition of stakeholder “*an individual, group, or organization who may affect, be affected by, or perceive itself to be affected by a decision, activity*”¹⁸ results in a much larger number of stakeholders than will normally be in the stakeholder register. Porter and Kramer²⁴ emphasize the creation of shared value with the stakeholders. The authors claim that in prioritizing short term gains for the shareholders, companies are to blame when political policies and legislation are put in place which in turn reduce their competitiveness. Their proposed solution involves creating economic value in a way that also creates value for society by addressing its needs and challenges.

The effects of a project may by far outlast the project itself. Decisions taken and activities carried out in the project may therefore create stakeholders that are not around at the time of the project being executed. Freeman et. al²⁵⁻²⁷ has made the case of the globalized view of stakeholders. It may therefore come as no surprise that the idea of introducing sustainability thinking through stakeholder management have been put forward in academic literature. These tend to conclude, however, with the need for a new paradigm in project management^{20,21}.

3.3. Sustainability and Governance frameworks

Kerzner states in “Project management: a systems approach” that governance is the process of decision making²⁸. He continues: “*On large complex projects, governance will appear in the hands of the many rather than in the hands of the few. Each stakeholder will either expect or demand to be part of all critical decisions on the project*”. As an increasing proportion of projects grow more complex, so does the governance process. The channels for governance

must be clearly defined at the beginning of the project. Klakegg²⁹ describes the concept of *governance framework* in some detail. He proposes the following definition of a governance framework for projects “(...) a set of principles and an organized structure established as authoritative within the institution, comprising processes and rules established to ensure projects meet their purpose”. He points out that governance frameworks embed the values of the institution that develops or adapts it. The attitude to sustainability may be among these values.

The case can be made for sustainability in project management to necessitate a top-down approach in which the strategic relationships between vision, mission and objectives³⁰ and economic, ecological and social sustainability are made clear. This will include any defined sustainability policies of involved parties and applicable regulations. These may then form the foundation for the definitions of project scope, budget and schedule (or time, cost, quality). Several project governance frameworks have been developed in order to facilitate a holistic approach to project evaluation and management. Amongst these are the Logical Framework developed by the USAID³¹, the OECD project evaluation framework^{32,33} and several national governance frameworks for public projects (e.g. Office of Government Commerce in the UK and Ministry of Finance in Norway).

The logical framework is an objective- or goal oriented approach to project management. Several authors have attempted to evaluate the framework^{34,35} or amend it in order to better fit non-development projects³⁶. In its core there is the temporal logic model linking activities (+ assumptions) to outputs, output (+ assumptions) to achieving the purpose and finally achieving the purpose (+ assumptions) to achieving the goal. Although the framework is suitable to including sustainability dimensions, these are not made explicit.

The OECD project evaluation model on the other hand explicitly includes “sustainability” as evaluation criteria. However, “sustainability” is defined in relation to project benefits rather than holistically; “*The continuation of benefits from a development intervention after major development assistance has been completed. The probability of continued long-term benefits. The resilience to risk of the net benefit flows over time*”³⁷. Still, the framework is well adapted to the holistic approach to sustainability. The framework consists of five evaluation criteria; efficiency (related to the manner in which the outputs are produced), effectiveness (as to whether the outputs are appropriate to address the underlying need), impact (intended and unintended, direct and indirect), relevance (is solving the underlying need aligned with overall strategy?) and sustainability (will the benefits from the project continue for sufficiently long to justify the investment). In addition to the evaluation criteria, there are six cross-cutting issues relevant for all five evaluation criteria. These are economic and financial issues, environmental aspects, socio-economic aspects, technological aspects, institutional aspects and policy support measures.

Public projects do not have the best track record when it comes to time, cost and quality³⁸. Quality assurance schemes and project governance frameworks have therefore been put in place by many governments in order to address the issue. These governance frameworks serve several purposes. Some of these are to make sure that:

- The public projects that are to receive funding are in line with strategic aims and public policy
- There is an underlying need (which the project address)
- There are benefits from the project that will justify the investment
- The underlying need is addressed by the best project alternative
- All plans, appraisals, schedules, technical solutions etc. are realizable and the project risks are properly handled.
- There is an opportunity to stop projects when they ought to be stopped.

3.4. Indicators and measuring schemes to incorporate sustainability in project management.

The holistic governance frameworks are generally focused on the early project phases. Typically, they apply a “gateway” approach in which the project is scrutinized before important decision points. They do not enter into details concerning project execution. The performance management (or measurement) discipline provides a set of tools for managing the tactical and operational level of projects by the “measure to manage”-approach. Since Kaplan and Norton introduced the Balanced Scorecard³⁹ many authors have attempted to amend and adapt the scorecard to fit various needs. The original scorecard contained four perspectives; the financial perspective, the customer perspective, the internal process perspective and the learning and growth perspective. It was conceived as a tool to avoid shortermism and turn intangibles as intellectual capital and knowledge creation into long-term assets. Lämsiluoto and Järvenpää⁴ state that even though cultural change is slower than a technical alteration to a measuring system, utilizing

the BSC for the purposes of environmental management is a worthwhile pursuit. Figge et al⁴⁰ propose three approaches to incorporating sustainability in the balanced scorecard; (a) integrating ecological and social sustainability in the existing perspectives, or (b) introducing a fifth non-marked perspective in addition to the original four, or ultimately (c) deducting a derived environmental- and social scorecard. Several authors propose sustainable scorecards along the same lines⁴¹⁻⁴⁴.

Measuring a vague concept like sustainability however, may be tricky. In the worst case it may even be counterproductive, as people tend to take numbers as “truths”. Bell and Morse⁴⁵ argue in “Sustainability Indicators: Measuring the Immeasurable?” that one should prioritize the holistic qualitative approach rather than the focused quantitative one when it comes to sustainability. When defining indicators, Levett⁴⁶ points out that these should be; (a) policy relevant, (b) resonant, (c) scientifically valid and (d) measurable (i.e. the necessary data are available). He also points out that the choice of indicators tends to be value-laden and represent the worldview of whoever is responsible. Several other authors have dealt with the issue of sustainability indicators⁴⁷⁻⁵³.

4. Discussion: possible ways forward to incorporating sustainability in project management

Several textbooks on project management incorporate the issues of sustainability (including^{18,28,54,55}). The ones in which sustainability in project management is the main theme (like Silvius^{56,57} and Maltzman and Shirley⁵⁸) remain the minority. Sustainability issues in project management are well documented in the academic literature. Even though some of the articles are in dedicated project management journals, most are in journals dedicated to other disciplines. These, however, tend not to be as well positioned to adapt the holistic view as dedicated project management journals are. The application of sustainability considerations is relevant for project efficiency as well as project effectiveness; executing the best project in the best possible way. Doing so implies incorporating increasingly sustainable solutions, tools and materials from areas such as sustainable construction, logistics and supply chain management, and performance management, while yet being able to prioritize with regards to the “big picture”.

Several articles end by pointing out that incorporating sustainability considerations in the project management process would equal the introduction of a new paradigm^{20,21}. The effects of sustainability considerations and decisions rooted in them are long-term and may appear insignificant in the project lifetime. The definition of project management in the PMbok Guide is “*The application of knowledge, skills, tools, and techniques to project activities to meet the project requirements*”¹⁸. “Project requirements” will typically emphasize the project outputs. Adding to this is the ambiguity of the sustainability concept. The concept of sustainability is vague by intention and practices and applications are multifaceted. The ambiguity confuses actors and stakeholders, effectively diluting any actions taken to incorporate sustainability in project management practice. One way to address this is by providing increased competence in sustainability thinking to project actors to match the expectancies of stakeholders. As to whether the increased knowledge and insight should be concentrated at project owners, program or project managers is open for debate.

Is sustainability most effectively regarded as an outcome or a process in projects and project management? In line with its ambiguous nature, sustainability may be the result of a short-term decision (*a sustainable outcome as the solution to a limited problem*) or the result of a long-term development (*providing sustainable solutions to a wide set of issues*). It might also be a *characteristic* of a development and a *quality* of a process. When regarded as a process, sustainability is a way to implement the integration of considerations and trade-offs necessary to make sustainable solutions possible. OECD⁵⁹ claim that sustainable development may be regarded as a conceptual framework, providing a holistic and balanced world-view, a process of integration across space and time to all decisions, and an end goal in which welfare is constant or increasing without the depletion of resources.

Sustainability thinking in project management seems to be regarded as extrinsically motivated; it must be pushed onto the project either by external stakeholders, policies or legislation. On the other hand, Silvius⁶⁰ documents an ambition among project participants of increasing sustainable practices in their organizations’ projects. Eid⁶¹ points to systems dynamics to address this. In systems dynamics, there is focus on identifying leverage points in complex systems. At the leverage points, one might influence the system to respond powerfully or change state. For sustainability to become an integer part of project management identifying such leverage points is crucial. A thorough understanding of mental models of projects and project management will be essential for deciphering how and why certain projects succeed sustainably. A promising starting point for identifying leverage points for integrating

sustainability in project management may hence be in mapping the mental models of project management practitioners, project owners and stakeholders.

5. Conclusion

Sustainability issues and the ways in which sustainability considerations may be incorporated in project management are well documented in academic literature. The field is still emerging, as a majority of the publications covering sustainability and project management date from recent years. There still exists a challenge due to much of the relevant literature being published in journals not dedicated to project management. Incorporating new solutions, tools and concepts put forward in relevant industries and professions must be done without losing the holistic view applicable to project management. Still, there also exist a gap between what is suggested in the project management literature and what is carried out in practice. Some of the reason behind the discrepancy stems from the ambiguity of the sustainability concept. There is general consensus regarding the three basic dimensions of sustainability: social, economic and ecological, as well as what it suggests for project management; emphasizing the long-term view, including local, regional and global issues and stakeholders as well as underlying values. However, sorting out what genuinely will contribute to sustainability in practice is a difficult task. It is demanding the proper competence from decision makers and project practitioners, and quite possibly a significant mind shift. To understand the extent of this, as well as where to address mapping the mental models of project practitioners, project owners and stakeholders with regards to sustainability will be a promising start. Understanding the mental models underpinning practical project management may help identifying the leverage points necessary in order for sustainability to become an integer part of project management.

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