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*Future-Proof: Foresight as a Tool towards
Project Legacy Sustainability*
Second Edition
by Marisa Silva

Future-Proof: Foresight as a Tool towards Project Legacy Sustainability[1]

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Abstract

The topic of sustainability has experienced a growing interest in the general academic and professional community recently. However, literature shows that it is still incipiently explored within the project management field, where the scope of research is limited mainly to construction and development projects. Moreover, since projects are a way of bringing a vision of the future into reality, and sustainability has at its core an orientation towards the future, it is surprisingly to note that links between the discipline of Foresight and Sustainability are scarce in project management literature.

This paper will thus review the existing literature linking foresight and sustainability, and explore its relationship with project management in order to assess whether foresight can be a useful tool to sustain project legacy over time. Drawing on conclusions reached, this paper will also propose a practical approach to incorporate foresight into project management methodology, and concludes with managerial implications, limitations, and recommendations for further research.

Key words: *project management, foresight, sustainability, project legacy.*
JEL code: M11, M19

Introduction

In a world where markets are characterized by a fast pace of change and unpredictable events, complex interdependencies and extreme volatility, planning for the long-term and building a lasting legacy presents itself ever more as an challenge for organizations. In view of this scenario, to demonstrate abilities of agility, anticipation and resilience is to hold clear competitive advantages, and if in the past following a strategy by trial and error could be a successful approach, nowadays fail to think the future is to condemn the survival of an organization.

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[1] *Second Editions are previously published papers that have continued relevance in today's project management world, or which were originally published in conference proceedings or in a language other than English. Original publication acknowledged; authors retain copyright. This paper was originally presented at the 4th Scientific Conference on Project Management in the Baltic States, University of Latvia, April 2015. It is republished here with the permission of the author and conference organizers.*

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It is in this context of extreme uncertainty and complexity that different approaches to deal with uncertainty are beginning to be introduced and that the discipline of Foresight, also referred as Future Studies, has gain recent interest amongst academia and business players. Despite the growing awareness for this subject, the element of Foresight is elusively described in the Project Management field, and literature review conducted shows that there is a clear insufficiency of Foresight research in Project Management literature. Since projects play a pivotal role in shaping and building the future and are by nature delimited by uncertainty, it is thus surprisingly to note the little attention devoted to this topic so far. Hence, the aim of this paper to identify how Foresight fits in the context of Project Management and its value to the discipline, following preliminary work produced by Pich et al (2002), when exploring approaches to cope with uncertainty and complexity in Project Management, and expanded by Taleb (2010) and Flyvbjerg (2003). For this purpose, particular emphasis is put in the legacy of a project, since while a project is a one-off endeavour intended to deliver a set of outputs and outcome, intended for the short-term, it is the legacy of a project which is oriented towards the future, intended for the long-term, that might benefit strongly from using Foresight as a future-proof tool.

Further to this point, the paper addresses the project legacy from a view of sustainability, here comprising both the act of embedding and building on the legacy over time (to sustain change), and the alignment to principles of sustainability that allow current needs to be satisfied without neglecting the needs of following generations. Although the author acknowledges important differences between the two perspectives, both should be part of the responsibilities of a professional project manager and are represented together due to this fact and to the close relationship with the concept of Foresight, where all concepts express a common concern about the future.

Since data on the relationship between Project Management, legacy sustainability, and Foresight, is loose and not yet robust, the methodology used in the paper consists of review of relevant literature available and builds upon anecdotal evidence to support examples provided, drawing from the epistemological basis of interpretivism, that is, a qualitative and theoretical perspective that aims to provide a comprehensive yet exploratory review of the topic being analysed. Although constrained by availability of sources and lacking empirical testing, the author believes that the paper represents a solid theoretical starting point for anyone interested in how the future is perceived and acted upon in relation to Project Management. From a practical point of view, it is argued that the framework here described can contribute to increased gains of resilience in the management of projects.

Regarding the structure of the paper, it starts with a literature review on the concepts of project legacy, and sustainability, where the relationship between Project Management and sustainability is lightly presented. Later, it is given an introduction to the concept of Foresight and to Scenario Planning, where Scenario Planning is described not just as a decision-support tool but as a multidisciplinary discipline that helps to make sense of the future and be better prepared for it. Examples of corporate successful cases where scenario planning was used and those where scenario planning could help avoid failure are also presented.

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The paper concludes by exploring how Scenario Planning can be a valuable tool to sustain a project legacy over time. To support this premise the author proposes a scenario planning framework that could be applied to Project Management.

Finally, conclusions and managerial implications are provided as well as limitations and recommendations for further research.

Literature review

What is a project's legacy?

In broad sense, legacy is represented by a distinctive positive impact one leaves behind and can be handed to others, that is, what one learned for the past and built for others to use and to benefit from in the future.

In the context of projects, it can be said that, conceptually, all projects carry an element of legacy as they are aimed to *"create a unique product, service, or result"* (PMBOK® Guide, 2013), which will realize benefits over time and enhance the organization capabilities. The question should be posed, however, if this view is complete. In fact, the definition on what constitutes a project legacy has been scarcely explored in the literature or is often narrowed to knowledge generation, whose main benefit would rely on the potential knowledge re-use and the enhancement of capabilities towards a learning organization (Senge, 1990). Yet, being the de-facto vehicle for change, projects are by nature well placed to shape not just the organization but the legacy organizations want to leave in the world.

Cooper et al (2003), defined project legacy as including "not just the design products and leftover parts, but new processes, relationships, technology, skills, planning data, and performance metrics." According to these authors, a project's legacy is composed of three broad categories: the product legacy, the process legacy, and the people legacy. The authors have also identified three primary players for the legacy process - the current project, the organization, and a future project -, where (potential) benefits, primarily related to knowledge re-use, can be gained to the project, the individuals who worked in the project, and the organization.

While the organization is, ultimately, the closest and immediate receiver of the project legacy through the realization of benefits for the business, it is worth noting that the reach of actors that might benefit from the project goes beyond the boundaries of the organizational environment. Although this might sound like an acknowledged fact, where according to common best practices internal and external stakeholders should be identified and engaged throughout the project lifecycle, it is not unusual to find projects where the scope of impact is not being fully considered or where it is limited to the impact to the organization and a reduced number of actors, hence, reducing the potential for far-reaching legacy to be effectively built.

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Applying the same rational, a paradox can be observed since the preservation of the project legacy often ends at project closure, consisting most of the times of no other activities than ensuring handover and support, archiving project documentation, conducting contractual and administrative closure of the project, and collecting and distributing lessons learned from the project, in order to facilitate knowledge transfer and re-use in future projects.

Further to the previous points, although without using the term "legacy", Shenhar and Dvir (2007) advocate that the success of a project can be measured overtime, having illustrated the need to consider the full impact of the project timeframe and not just focusing on the immediacy of delivery. Also, Silvius (2009) supports this idea through the concept of sustainable project management, as represented in the image below:
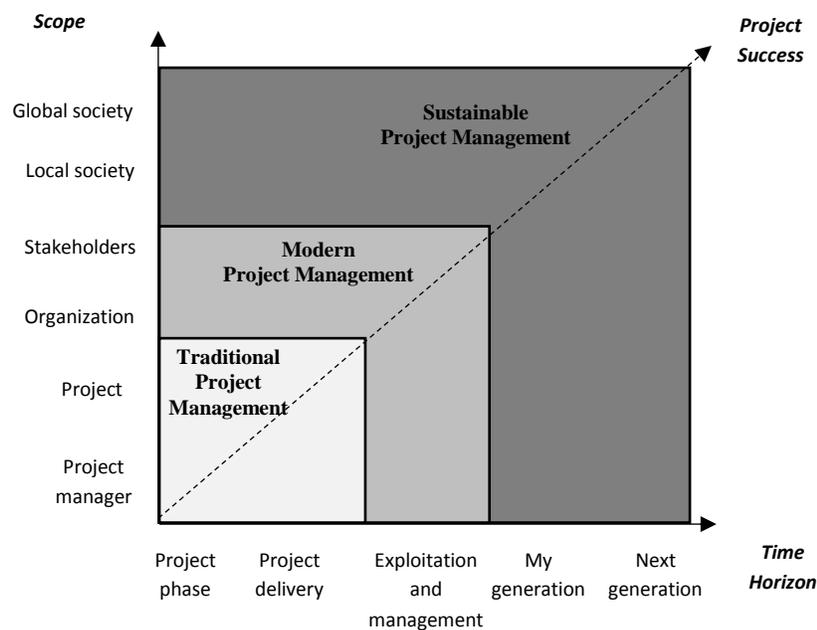

*Figure 1 – Project success timeframe (adapted from Silvius, 2009)*

As displayed above, the legacy of a project does not end when the project is delivered but actually extends beyond the project lifecycle. Also, it has the potential to reach a wider scope than just the organization and its current stakeholders, and has the power to impact more than just the business as usual but also ours and next generations. If this was a utopia a couple of years ago, now, in an era where new megaprojects are starting every day and affecting wider audiences, to be aware of that fact and to incorporate principles of sustainability at the heart of a project inception is key as part of the responsibilities of a professional project manager (Silvius, and Schipper, 2014). The attentiveness to the future of a project legacy calls for a new paradigm in the discipline of project management, where legacy is oriented towards sustainability - Sustainable Project Management.

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What is sustainability and how does it relate to project management?

Despite several different variations on the concept of sustainability, it can be said that all derive from the same key idea – how can we develop prosperity without compromising the needs of future generations (United Nations General Assembly, 1987)? This idea implies three interrelated development dimensions which demand balance - social sustainability, environmental sustainability, and economic sustainability -, coined by Elkington (1994) as the "triple bottom line" or "triple-P" concept (People, Planet, Profit) when in a business context:

Sustainability should not be addressed in a simplistic way though, and it should be remarked that there are a set of principles that enrich the meaning of sustainability, including accountability, transparency, ethics, and value orientation, amongst others (ISO 26000; Gareis et al., 2009; Silvius and Shipper, 2014).

Although the topic of sustainability has been subject to increasing interest from the academic community, the relationship between sustainability and project management is still an emerging field of study (Gareis et al, 2009; Silvius et al, 2012). Given the fact that projects are conducted with the aim to achieve a desired future (the legacy to-be), and that sustainability has at its core a forward-looking orientation, it is thus of interest to analyse the links between these concepts, and what role do projects and the discipline of Project Management play towards a more sustainable world.
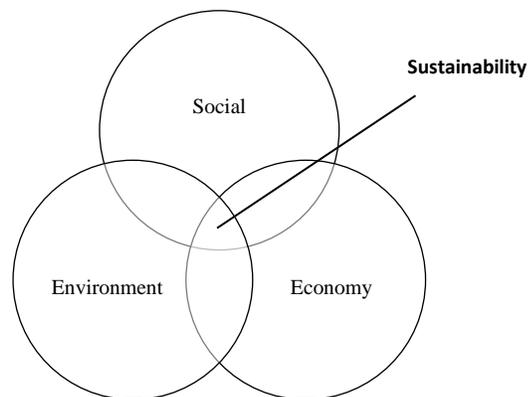
Figure 3 – The triple bottom line (adapted from Elkington, 1994)

A general growing awareness to the topic of sustainability can be observed in recent years, where several companies worldwide now share their sustainability strategy, and produce sustainability plans and annual sustainability reports as part of their governance strategies. However, with few exceptions (e.g. London's 2012 Olympic Games, UK Crossrail, Heathrow Terminal 5, 2014 FIFA World Cup™), this practice has not extended to projects in a consistent manner yet or is been only applicable to megaprojects with public visibility. Also, project management

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practitioners are not yet full knowledgeable about what sustainability entails and how to integrate it within projects (Ebbesen, and Hope, 2013), which might help to understand why, in a study conducted in 2013, an overall average of only 25.9% of organizations were currently considering the concepts of sustainability in the initiation, development, and management of theirs projects (Silvius et al., 2013).
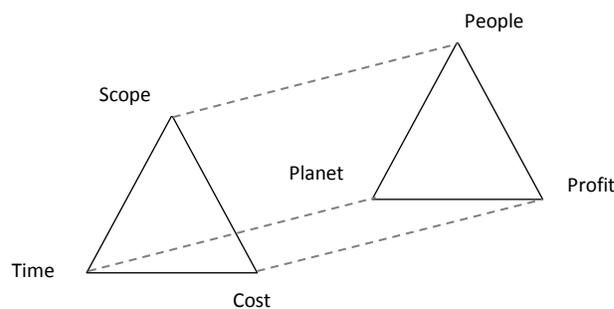
In view of this scenario, a starting point is to compare the characteristics of sustainable development and Project Management, which were summarised by Silvius and Schipper (2014) as illustrated below:

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 4 – Characteristics of Sustainable Development and Project Management (adapted from Silvius and Schipper, 2014)

It is evident that there is a conceptual contrast between the two perspectives, particularly in regards to the time horizon that is at stake since, while projects are typically oriented to short-term, sustainable development involves a wider timeframe that goes beyond the project lifecycle.

Despite this difference, Project Management and sustainability are intrinsically linked, as projects are essential to build a more sustainable world, and sustainable practices are essential to deliver better project legacies. Sustainability starts with Project Management, in the sense that "when a product or service is conceived and translated into requirements there are social, fiscal, and environment impacts that should be measured and accounted for in terms of development, life-span, servicing, maturity of process, efficiency etc." (J. Carboni, 2013). Hence, the responsibility to also factor in requirements around sustainability and look beyond the classical tripe constraint requires project managers to now change both their scope and their mindset (Silvius and Schipper, 2014) in order to actively respond to the challenges of the scarcity of resources at a wider scale.

Figure 5 – Linking the Triple Constraint with the Triple Bottom Line
(source: author's own)

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With this in mind, it can be said that, ultimately, the legacy of the project (and its planning) represents the link bridging the present and the future of the idea (need or opportunity) that originated the project, thus, thinking about sustainability implies, by derivation, thinking about the project legacy. The challenge arises however on how to think about and plan today for a lasting legacy that is distant in time and set to be part of the future. How to ensure that what is being built today will still be relevant, suitable, and aligned with the sustainability principles of tomorrow? For that purpose, this paper will in the following sections suggest the use of Foresight and Scenario Planning as a future-proof tool towards project legacy sustainability.

Discussion

The case for Foresight as tool for the project's legacy future

Foresight can be described as the discipline, skill or process of engaging the future in order to "provide challenging visions of alternative futures which can be acted upon today in order to shape the best possible tomorrow" (Jackson, 2013). This definition carries two distinctive characteristics of the concept of Foresight: first, that thinking about the future is thinking about not just one version of the future but several versions; second, it calls for decisions to be made in the present in order to influence the future.

The idea that the future is not one but many may seem difficult to embrace at first yet, if we think about the numerous and unpredictable factors that form it, it is reasonable to consider its different possibilities. In fact, Foresight theorists agree that the future is not known but is not completely unknown either, as most of the times it is possible to bound uncertainty at a certain extent allowing to foresight different ways of how the future might unfold, that is, there is room for several possible futures, ones more plausible than others to occur. This idea is expressed in the cone of plausibility, which distinguish different views of the future:
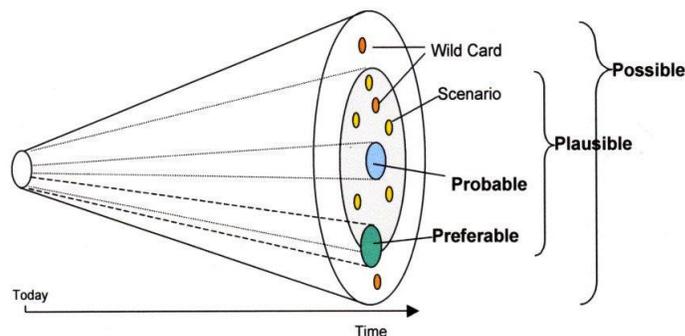

Figure 6 – The cone of plausibility (adapted from Taylor, 1993; image
retrieved from http://thinkingfutures.net/)

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1. *Probable or Official future*: in the centre in the cone of plausibility lies the probable or official future meaning the one that is most likely to reveal should the environment proceeds as usual; it represents a collective view of what is going to happen as expected.
2. *Preferable Future*: the preferable future sits close to the probable future since it is variation of this latter representing what is desirable by an organisation and/or individual to happen.
3. *Plausible Future*: the range of alternative futures that may be reasonably anticipated represent a plausible future, this is, what could happen instead.
4. *Possible Future*: by broadening the scope of potential futures, even if not conceivable to take place, we then include possible futures, which represents what might happen, the thinking of the unthinkable.

Foresight consists of a multidisciplinary and holistic perspective of an organization's environment and uses a set of methods and tools that enable decision-makers to make a sense of driving forces of change, emerging trends or weak signals, and get an understanding of the complexity that results from the interactions amongst them. By envisioning different versions of what the future might look like and exploring its implications, Foresight also discloses opportunities and threats that are not always easily perceived, allowing for an anticipatory awareness to risks and challenges and enabling better informed decisions.
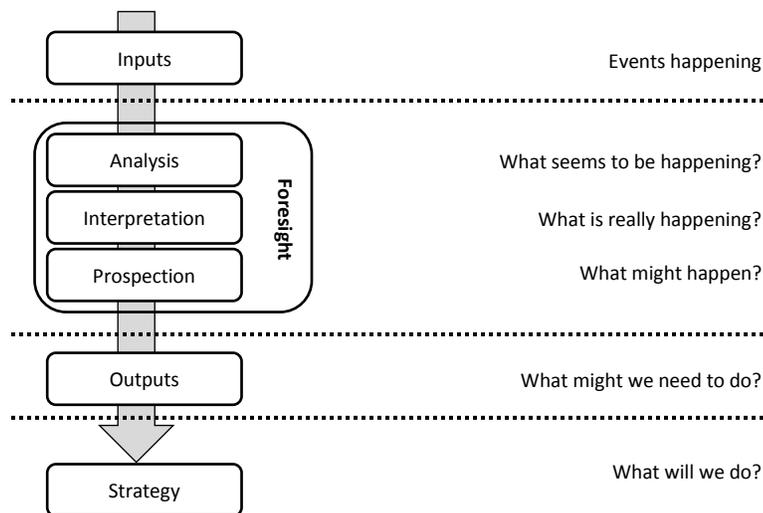

Figure 7 - Foresight process (adapted from Voros, J., 2000)

According to Rohrbeck et al. (2009), "top performing companies do not only use their Strategic Foresight insights to anticipate the future, but they strongly take actions in actively shaping it." In fact the effectiveness and usefulness of foresight lies in its call-to-action, this is, its ability to influence decisions and trigger management reactions that ultimately could drive the company's strategy towards its preferable future.

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Among the techniques that form Foresight, one of the most well-known is Scenario Planning which has been subject of an emergent popularity. Pioneered by Herman Kahn in the '40s and followed by Royal Dutch Shell in the early '70s, Scenario Planning has been used by this company in a systematic way since then and nowadays other organizations (e.g Siemens[2], Airbus[3]), including governmental bodies, have also successfully implemented this methodology.

A scenario can be described as a narrative description of a future that focus attention on causal processes and decisions points (Kahn, 1967), providing a context in which managers can make decisions. It should not be misinterpreted as a forecast or a prediction though. While a prediction intends to calculate the chances of a particular outcome as accurately as possible, scenarios are not about whether a plotted future turn out to be right or wrong or neither about sensitive analysis; scenarios suggest plausibility, not probability and its objective is to lead to better decisions, not better predictions.

Exploring the different shapes that can be taken by an uncertainty that is critical for the success or failure of an organization is the basis for scenario planning thus. An effective scenario displays the following characteristics:

- It challenges the dominant paradigm (the official future) and yet is plausible within the cone of plausibility
- Is internally consistent in the way that alternative scenarios address the same critical uncertainty
- Is clearly and explicitly distinguishable from other scenarios as they do not represent slight variations but divergent options
- Is described in a credible and exciting manner able to affect and/or conduct towards action.

By fostering the systematic exploration of future possibilities, scenario planning provides organizations with the opportunity of rehearsing the future and plays an important role in challenging assumptions and mental maps that ultimately leads to better awareness of risks and opportunities and anticipatory resilience as a competitive advantage for the long-term. To actively engage into thinking about the future can enable flexibility in risk responses, prevent missing opportunities and, ultimately, even save a company's future as highlighted by the following examples where key-players in their industry failed to foresee the game-changer disruptions ahead:

- Kodak: once leader in the photography market, Kodak is nowadays a case-study of what can be the impact of neglecting an emerging trend as the company missed the opportunity of digitalization and has gone into bankruptcy in 2012.

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[2] http://www.siemens.com/innovation/en/home/pictures-of-the-future.html (accessed 10/02/2015)
[3] http://www.airbus.com/innovation/future-by-airbus/ (accessed 10/02/2015)

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- Blockbuster: the well-known movie-rental company filed for bankruptcy in 2010 after failing to adapt its business model to online technology, a trend that was spotted in advance by competitors such as Netflix.
- Nokia: formerly regarded as a leader in mobile phones sector Nokia had lost a large share of the market by underestimating the important shift towards smartphones.

In fact, when a company fails, this is not much related to incorrect forecasting around cost figures or price tables but often due to an inability to think holistically about the driving forces that may change its business landscape in a disruptive way and that can profoundly impact its long-term success.

Following the points mentioned above, the same principle can be applied to a project's legacy, where legacy should be thought about at the very beginning of the project and where scenario planning can be prompted at the project early stages so that the project team and sponsoring organization are engaged and motivated towards a long-term view of the project and that the legacy to be produced and transferred is comprehensive and robust enough to sustain in face of different scenarios that might materialize. This idea is captured below, where the relationship between the legacy lifecycle and the project lifecycle is represented, along with the activities and key questions that compose each of the stages of the legacy process.
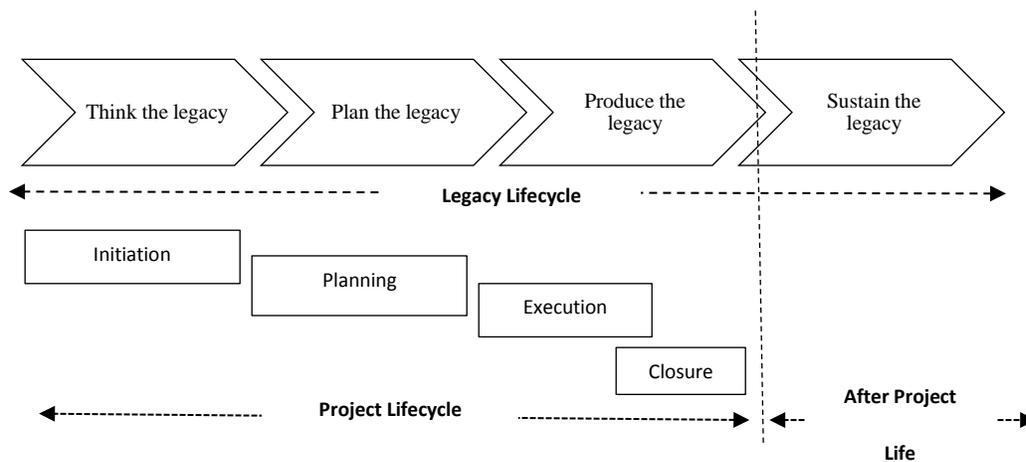
Figure 8 – Relationship between the legacy lifecycle and the project lifecycle (source: author's own)

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Stages	Activities	Key Questions
Think the legacy	▪ Develop the legacy vision for the project	▪ Which legacy do we want this project to leave, in regards to people, the planet, and profit? ▪ How better will the world be with this project?
Plan the legacy	▪ Collect and document requirements for sustainability ▪ Develop a sustainability plan for the legacy ▪ Test the legacy vision and sustainability plan through scenario planning implementation	▪ Which sustainability requirements do we need to meet to achieve our legacy vision? ▪ Which activities and resources will be required? ▪ Which are the driving forces and critical uncertainties that could affect the project legacy? ▪ How will the world look like after this project is delivered? ▪ Will the legacy still be relevant in 10, 20, 50 years' time?
Produce the legacy	▪ Deliver the project's product ▪ Capture, document, and disseminate the project knowledge	▪ Does the project meet the requirements and defined acceptance criteria for it to be sustainable? ▪ Is knowledge being effectively captured, documented, and disseminated within the organization? ▪ Is this knowledge available to be re-used?
Sustain the legacy	▪ Manage the legacy of the project ▪ Review, monitor and control the application of the sustainability plan	▪ Are we continuing to build on the project legacy? ▪ Is the sustainability plan being effectively delivered? ▪ Do current/future projects support (and are being supported by) our legacy?

Table 1 - The legacy lifecycle (source: author's own)

Looking with further detail on how to implement the scenario planning process mentioned as part of planning the legacy, four main steps are recommended in line with most of scenario planning methodologies:

1. *Scan and Sense* the environment, with the goal of identifying which are the trends and driving forces shaping society, the region and the industry within which the organization operates, and also the context in which the project exists, putting the concept of legacy and sustainability at the heart of this exercise; PESTLE (Political, Economic Socio-cultural, Technological, Legal and Environmental) analysis is usually included as part of this first step;

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2. ***Explore and Identify*** the critical uncertainties that could re-define dramatically your project legacy vision; these are generally two or three major driving forces from the previous step;

3. ***Shape and Build*** plausible scenarios based on the critical uncertainties previously identified; scenarios should represent contrasting possible futures where the project legacy might take place, each containing a different and distinctive name and narrative;

4. ***Think and Act*** on what might be the paths and implications derived from each of the scenarios for today's project activities in case the project legacy takes place in those scenarios; the purpose is to enhance preparedness for the future, not to be right about it.
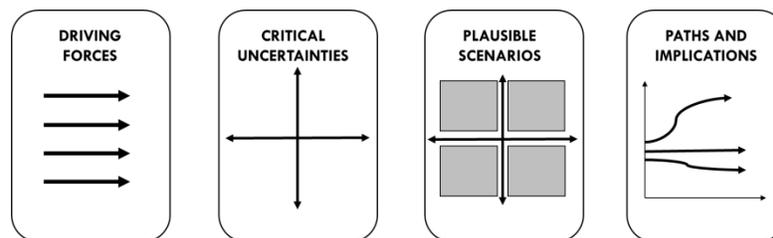

Figure 9 – The Scenario Planning process (source: author's own)

By asking the right questions rather than providing the right answers, the practice of Foresight allows project managers to explore in less obvious places the signs of change, trace them and act upon them, claiming to themselves an active and proactive role and not just the one from a impassive observer towards the world by which theirs projects are surrounded and affected. It is acceptable to be defeated but it is no longer to be surprised.

Conclusion

The paper concluded that there is a strong implicit link between the project legacy, Foresight, and sustainability, which are all oriented towards the future. Further to this point, it advocates that project managers have an important role to play when managing a project, not just focusing on its delivery but also on its legacy and how the legacy can sustain and be sustainable over time. In order to do so, Foresight as a discipline and Scenario Planning as a tool are recommended to support the goal of a lasting legacy.

This paper aimed to start a conversation on incorporating Foresight practices into the field of Project Management, as this area has been scarcely explored and is proving beneficial in other fields such as general management. It should be noted however that it is based on a conceptual model, hence, one of its main limitations lies in its lack of factual corroboration and thus more empirical research is needed to support the proposal presented through strong evidence.

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Recommendations for research include identification and analysis of other areas and processes of Project, Program, and Portfolio Management where the introduction of scenario planning as a tool and technique could be a benefit. Although Risk Management is inherently related to scenario planning due to its nature, others processes might also make advantage of this tool which could be particularly relevant to Portfolio Management, where to set the right mix of projects and resources that are resilient to different scenarios is critical to the effectiveness of the strategy of organisations.

Additional research is also needed regarding the extent to which scenario planning might apply to different industries (e.g. IT and construction) as the criticality of the planning horizon can vary significantly amongst them. Other stream for research would be to investigate to which extent different countries are prone to use scenario planning in their projects by relating this approach with their score in the cultural dimension of "uncertainty avoidance" as defined in Hofstede's model.

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About the Author

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Marisa Silva is an accomplished Project and Portfolio Management (PPM) professional and trainer with over 7 years of experience gained internationally and cross-industries. Passionate about PPM and Project Management Offices (PMOs), Marisa has developed her career from management consulting and has held positions as PMO Analyst, PMO Manager, PPM consultant, PPM Competency Centre Manager, and Country Manager. Currently she works as PMO Analyst at Oxford University Press.

Marisa holds a BSc. in Management, a specialization in Competitive Intelligence, a PgDip in Foresight, Strategy and Innovation, and is currently a MSc. candidate in Strategic Management of Projects, at University College London (UCL). As a trainer, Marisa delivered over five hundred hours of training in Project Management foundation and advanced courses and PMP preparation courses. She is certified as a PMP, PMD Pro Level 2, PRINCE2, and P3O professional, as well as a Microsoft Certified Professional (MCP) in regards to PPM tools.

Marisa has authored Project Management articles and scientific papers presented and published in international conferences, and is also an active member of the Project Management community and professional bodies. She is a member of PMI, APM, Founding Member of the IIBA Portugal Chapter, and has served as a volunteer in the PMI Portugal Chapter.

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