



SYSTEMATIC LITERATURE REVIEW: THE STRATEGY LINK BETWEEN BALANCED SCORECARD AND PORTFOLIO MANAGEMENT

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Abstract

Strategic management is a process that nowadays defines to a high degree the success of a business sector. However, the dynamic and turbulent environment of our world makes the management of multiple projects an inevitable process for businesses. Therefore, the success of a business environment is highly related to the interaction between strategic management and portfolio management processes. Consequently, the existence of a clear link among these activities would strongly facilitate the success of the final result. The aim of this paper is to investigate if the balanced scorecard tool, a strong strategic management tool, developed by Kaplan and Norton in 1994, is able to link strategic management and portfolio management processes and under which circumstances. In order to answer this question, a broad literature review took place, examining the most crucial parameters of the aforementioned processes, and the possibility of linking them with the balanced scorecard tool.

Key Words: strategic management, portfolio management, balanced scorecard, strategic link.

1. Introduction

Portfolio management is an approach to achieving strategic goals by selecting, prioritizing, assessing and managing work based upon their alignment and contribution to the organization's strategies and objectives (PMI, 2006). Portfolio management is essentially the linchpin between strategy and project execution. Portfolio success depends on strategic alignment and value maximization, whereas the success of both of these concepts depends on a series of parameters like prioritization, selection, transparency, control, risk management, resource allocation, governance, decision making and balance (PMI, 2006).

Further, project portfolio management – also called portfolio management – is the procedure under which organizations group and manage projects and programs as a portfolio of investments that contribute to the entire success of the enterprise. Burke defines project portfolio

management as ‘the continuous process of selecting and managing the optimum set of project initiatives that deliver maximum business value’ (Burke, 2002).

The four biggest universal problems in applying portfolio management, are (Kendall, Rollins, 2003):i) there are too many active projects for the organization to handle, ii) many of the running projects of the organization are unnecessary, because they do not contribute to its value preservation and maximization, iii) the projects and the strategic goals are not linked and iv) the project portfolio is unbalanced.

According to Mankins and Steele (2005), firms realize only 63% of their strategies' potential value and Johnson (2004) reports that *66% of corporate strategy is never implemented*. Further, Hrebiniak (2006) states, it is more difficult to make strategy work than to make strategy. Morris and Jamieson (2004) further affirm that *‘there is little literature on how business strategy is translated into project terms and itself, is not a well-researched or written about topic’*.

Taking into consideration all the above, it is understandable that the link between projects and strategic goals should be further and deeply examined. This is not an easy task, and the identification of such a link would definitely add value to the portfolio, contributing in its success and entire balance.

Portfolio management is a multi-dimensional process and for the above purpose, multi-dimensional success measurement and strategy implementation tools could be used, in order to enhance success. These tools could constitute a broader framework of evaluating the overall portfolio success. Such kinds of tools are, for instance, the Balanced Scorecard tool (Kaplan and Norton, 1994), the Performance Prism (Neely et al., 2002), Intellectual Capital (Edvinsson and Malone, 1997), and the Success Dimensions (Dvir and Shenhar, 1992). However, for the specific study, it was decided to focus on the Balanced Scorecard tool, as it is globally accepted and is adopted by many organizations, leading to spectacular results on business success. It is also a tool that is directly connected with the strategic concept.

Therefore, the current systematic literature reviews will focus on the following research question:

• *Can the Balanced Scorecard be used to define the link between strategic management and portfolio management processes?*

Focusing on the answer of the above research question, the current work is structured as follows. In section 2 we outline the methodology used to perform the systematic mapping review, including research question formulation, the selection of sources and studies, information extraction and the mapping process. In section 3, the results obtained after performing the systematic mapping review are presented. Finally, in section 4, we outline the conclusions obtained and future directions.

2. Systematic mapping review – literature review stages

The literature review was performed by following a thorough procedure, which is described below. The main goal of our review was to compile the most relevant and newest studies for strategy and portfolio management topic areas, to analyze and prioritize them, and finally to

present them in the form of a visual summary (map) of classified studies, which would be able to help us identify the link between strategy and portfolio management. To achieve this goal, the usefulness of the Balanced Scorecard tool was mainly examined. The classification and prioritization of the studies was based on relevant set criteria. The main criterion that was used in order to assess and then to include, or exclude, the studied material was the degree of accomplishment of the paper's research question.

2.1 Conducting the search

The research had as a starting point the fact that strategy is not connected to portfolio management, or is not well communicated (Cooper et al., 1998). As seen in the introduction section, there are further studies that primarily or secondary support this evidence. Therefore, there is an imperative need to close the gap between strategy and portfolio management.

Based on our research question case, the following sequential hypotheses could take place, in order their validity to be further examined:

•If balanced scorecard can link strategy and portfolio management, then this could contribute to closing the gap between projects and strategic goals.

•The gap between projects and strategy or strategic goals could close or be eliminated if a new dimension was added to the original Balanced Scorecard model, that would have as a purpose to contribute towards this direction.

•The gap between projects and strategy or strategic goals could be eliminated if the gap between strategy formulation and strategy implementation could further close.

A wide literature review took place using a variety of keywords in order to answer the research question and to test the validity of the aforementioned hypothesis. The keywords that were used for this purpose were: *strategy, portfolio management, balanced scorecard, alignment, implementation, prioritization, gap, link, resources, interdependencies, interactions, relationship, balance, dynamics, complexity, and systems thinking.*

These keywords were either connected to comprise a full logical sentence (like for instance "*Link between strategy and portfolio management*") or with logical connectors like "OR" and "AND". In this way the main search string was obtained (Table 1).

Apart from the main search string, multiple search strings were used. The results obtained led to a very large amount of academic publications in general. Not all of them were useful, while the majority of them provided us with a general, and in many times, in-depth idea of prevailing concepts, theories and practices that are used for the examined areas. However, the final academic material that contributed to the answering of the research question was quite few.

Google and Google Scholar were the used sources, from which the academic material was obtained. In these specific search engines took place the main search string that is presented below.

Table 1

Search main string.

(Relationship OR link) AND (strategy) AND (portfolio management)
(Relationship OR link) AND (Balanced Scorecard) AND (portfolio management)
(Strategy) AND (Balanced Scorecard) AND (portfolio management)
(Balanced Scorecard) AND (link) AND (portfolio management)
(Balanced Scorecard) AND (relationship) AND (portfolio management)
(Balanced Scorecard) AND (portfolio management)
(Relationship) AND (strategy) AND (portfolio alignment)
(Gap) AND (strategy) AND (portfolio management) AND (Balanced Scorecard)

In the results obtained from the above search strings, one restriction included was that of selecting only those pieces of work published from the year 1998 onwards. Strategy and portfolio management are issues that are widely affected by the external environment, therefore the choice of selecting pieces of work 1998 onwards was part of the research strategy. There were also pieces of work, like the introduction of the Balanced Scorecard from Kaplan and Norton in 1992, which had to be studied, in order to fully understand the initial fundamental concept, before attempting to examine new editions of it.

The following table provides information about the essence of the research. The first column indicates the stages; the second one refers to the inclusion criteria that were used for each stage, while the last one depicts the remaining material after the screening of each stage.

Table 2

Selection of studies

STAGE	INCLUSION CRITERIA	Sources / material remaining after screening
		Google / Google Scholar
Based on search – <i>stage 1</i>	1. English language 2. Studies from the year 1998 onwards	100

3. Main search string

Exclusion upon title – <i>stage 2</i>	Relevance to the research question	80
Exclusion upon abstract / conclusions – <i>stage 3</i>	Approaching of the research question	50
Exclusion upon review – <i>stage 4</i>	Qualitative criteria (table 3)	42
Exclusion upon full text – <i>stage 5</i>	<ol style="list-style-type: none">1. Qualitative criteria (table 3)2. Presentation of direct links between strategy, balanced scorecard and portfolio management3. Supportive framework for investigating and / or structuring such a link	7

2.2 Screening of papers and Keywording of Abstracts and Conclusions – stages 1 to 3

The goal of this step was to identify the relevant papers, with regard both to the objectives of this review and to the scope of the research questions. The main difficulty in achieving this goal was that the keywords used in the primary search string (Table 1), led to results which were far too wide ranging. For example, strategy is a huge subject area and a large amount of papers therefore appeared in the first set of results obtained. Similar implications also were noticed for the ‘portfolio management’ keyword.

Referring to Table 2, the first stage results presented a large amount of papers and publications. This was due to the inclusion criteria that were used. But as the research was taking place, the number of the remaining relevant academic material was being reduced. This is explained by the continuous refinement of the inclusion criteria. As the process was going on, the inclusion criteria were getting stricter and more focused to the answering of the paper’s research question.

In the second stage the exclusion of papers and of academic material in general, based on their title took place. Consequently, the title of these publications was the next criterion in order to exclude or further include, in our study, the publications listed. Each title of the publications was

compared with our investigated research question. Therefore, the accomplishment of this second research stage was based on a criterion that claimed critical abilities, to some degree. After this, a number of publications were shortlisted to be further included in our study.

Critical abilities were also used in the third research stage, based on the papers' 'abstract'. The academic material that was further kept from this stage comprised abstracts that were reviewed and were relevant to our research question. It must be mentioned that this relevance was always the primary criterion for choosing the most suitable material, independently of the research stage.

This third stage of the research was carried out in two phases, the first of which consisted of a rapid review of paper abstracts. However, it became clear that, in some cases, merely reviewing the paper's abstract was not sufficient, and that it would also be necessary to review the work's conclusions (Rodriguez et al., 2012). So, at this third stage, we had a number of 50 papers / publications that were further included in our study.

The fourth and the fifth stage of the research were the most difficult and they are thoroughly described in the next section. At these stages, papers should be either reviewed or studied entirely in order to further exclude or include academic material, because a clear decision for their contribution to the research could not be made, just by reviewing their abstracts or even conclusions. This difficulty came up by the fact that at this stage, all abstracts / conclusions were relevant to the research question.

2.3 Data / information extraction and mapping of studies – stages 4 and 5

The extraction of information and the mapping of studies took place through research stages four and five, which are described below.

After accomplishing step 3, the next step was the assessments of the remained material (50 publications at this stage / Table 2). More distinct qualitative criteria were set for this purpose, as indicated in Table 3 below, resulting in 42 academic publications.

Stage five was the last one of the refinement procedure, leading to a final number of 7 publications. At this stage, the induced criteria, as indicated in Table 2, was the same as stage 4, but with the addition of two more parameters, which were the presentation of a direct link between strategy, balanced scorecard and portfolio management. In cases where this was not feasible, it was decided to examine the possibility of a supportive framework, which could aid so that this link to be investigated and structured.

Table 3

Qualitative criteria used at stages 4 and 5 of the literature review, for a more detailed assessment and refinement of the studied work

RESEARCH QUESTION	RESEARCH CONDUCTION	RESEARCH FINDINGS	FUTURE RESEARCH	<i>Yes</i>	<i>No</i>
Is the research question clearly defined	Is the context of the research adequately	Are the findings reliable /	Does the paper open avenues for future		

and described?	described?	trustworthy?	research?		
Is it relevant to our particular research question?	Are the research aims and objectives clearly defined and focused?	Are the findings relevant to our research context?	Does the proposed future research fits to the needs of our research context?		
	Do they present any similarity with the aims and objectives of our work?	Can the findings be applied to our specific investigation?			

Table 4

Mapping of selected studies

Authors		
	<i>Material revealing link between Strategy AND / OR BSC AND / OR Portfolio management</i>	<i>Material revealing qualitative links between Strategy AND Portfolio management</i>
<i>Norrie, 2006</i>	Improving results in the public sector using a BSC strategic model	
<i>Kostelac, Vukomanovic, Ikonc, 2012</i>	Integrating enterprise project portfolio management with the balanced scorecard: a case from the pharmaceutical industry	
<i>Rankins, 2006</i>	Aligning projects to strategy using BSC and Benefits Models	
<i>Anagnostopoulos, Elmasides, 2010</i>	Strategic plan in a Greek manufacturing company: A Balanced Scorecard and	

Authors		
	<i>Material revealing link between Strategy AND / OR BSC AND / OR Portfolio management</i>	<i>Material revealing qualitative links between Strategy AND Portfolio management</i>
	Strategy map implementation.	
<i>Fink, Marr, and Kuhle, 2005</i>	The future scorecard: combining external and internal scenarios to create strategic foresight	
<i>Meskendahl, 2010</i>		The influence of business strategy on project portfolio management and its success
<i>Killen et. al., 2011</i>		Advancing project and portfolio management research: Applying strategic management theories

3. Results and discussion

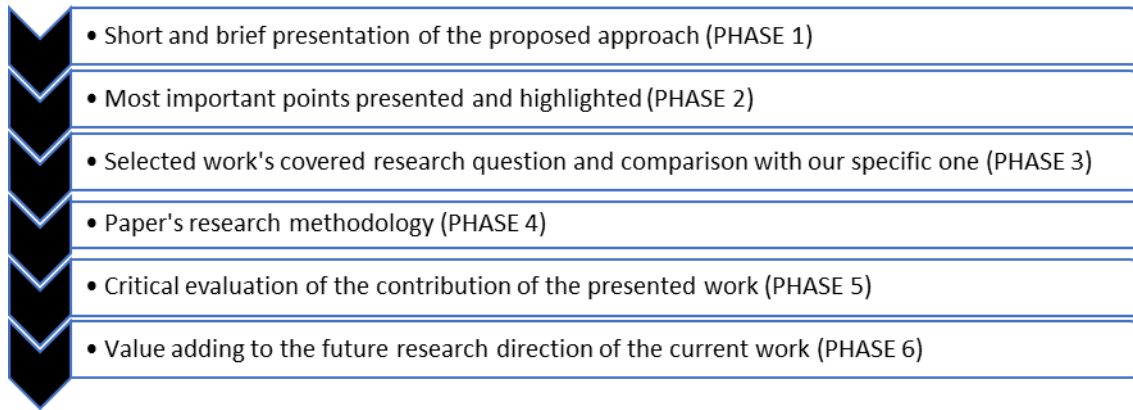
The purpose of this section is to present the primary findings obtained from the conducted systematic review and to further offer a comparative analysis between them and with the paper's research question, which is the investigation of a link between strategic management and portfolio management processes, using the Balanced Scorecard tool.

3.1 Methodology for papers' final refinement and analysis – stage 5 of literature review

The followed illustrated methodology took place for each examined paper.

Figure 1

Followed steps for material final refinement and analysis (literature review stage 5)



3.2 Phases' development for final material assessment

In this section it is illustrated how the final refinement and analysis of each particular paper was conducted, and what are the outcomes of this refinement. This was essentially the final stage of literature review and it comprised six refinement phases. The refinement took place in a range of 42 publications (Table 2), but due to space restrictions, the exact way that this procedure was followed is for the final selected material only.

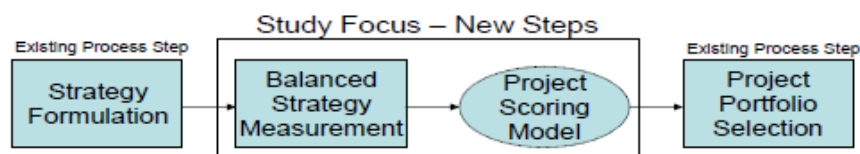
3.2.1 Most sound material with direct links between STRATEGY AND / OR BALANCED SCORECARD AND / OR PORTFOLIO MANAGEMENT

· **Study 1: Norrie, 2006:** *Improving results in the public sector using a BSC strategic model.*

1. Presentation of the proposed approach:

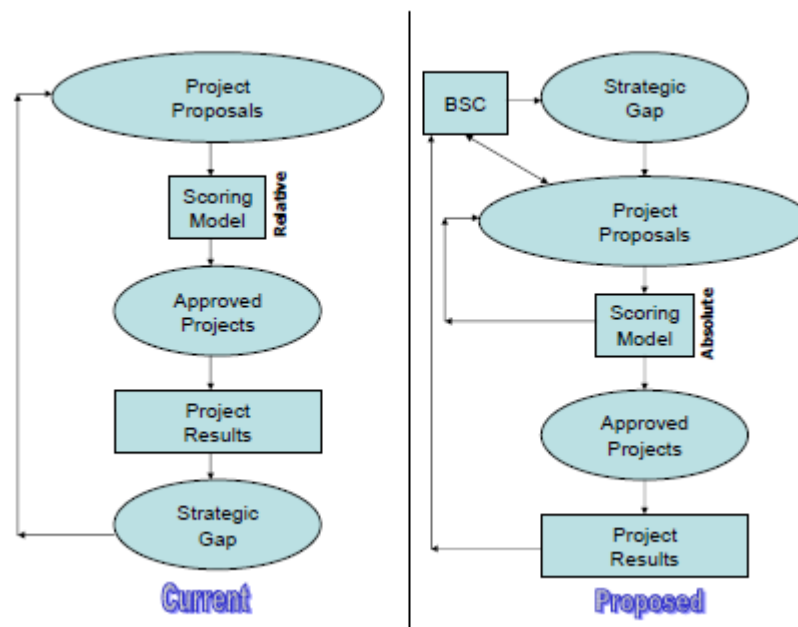
In his work, Norrie (2006) presented a way of improving results of project portfolio management in the public sector, using a balanced strategic scoring model. In contrast with the dominant trends, the author proved that especially for the public sector, by definition, financial measures are not adequate to contribute to profit and portfolio maximization. For this purpose, a more strategic aspect was essential, for achieving portfolio balancing and maximization. The incorporation of this new strategic dimension was achieved with the involvement of the BSC tool. The process map that Norrie (2006) followed in his study is illustrated below.

Figure 2: Adopted by: Norrie, 2006



The proposed approach by Norrie (2006) was to design an alternate process that would help executive leaders of organizations gain insight into the likelihood that a selected portfolio of projects will actually accomplish their intended strategy prior to their selection and execution. In addition to the above figure, this approach, and its comparison with the current PPM approaches, is isynoptically illustrated in the following figure.

Figure 3: Adopted by: Norrie, 2006



2. Most important points presented and highlighted:

The study identifies that for those who implement PPM, there is a need for a detailed method that can be understood at the enterprise level and to clearly link organizational strategy with non-financial project outcomes, enabling effective portfolio decision making. Therefore, the central issues that were addressed in this study were:

- What must be done to address the non-financial aspects of organizational strategy when scoring and selecting projects?
- How can we ensure the sufficiency of projects in the final portfolio to achieve execution of the complete organizational strategy?

For this reason the BSC tool was tested, to investigate its contribution to create a strategy dimension so that everybody inside the organization can understand. In order for this to happen, the key was to link projects with business strategy in a tangible and visible way. For this purpose, strategic aspect was connected to budget, quality and time constraints, achieving in this way a straight link between PPM and PM methodologies.

Further, strategy maps were used as alignment tools to link strategy with the BSC, through the interconnection of the four perspectives (customer, financial, internal process and learning and growth) with the organization's strategic vision. That interconnection took place through

achieved linkages between organizations objectives and multiple perspectives. In this way it was achieved a longer term strategic view and a strategy alignment and implementation breakdown structure.

3. Research question and comparison with our specific one:

The investigated research questions for the particular study were (Norrie, 2006):

- Are the proposed changes in the approach related to using a balanced PPM scoring model theoretically sound?
- Does the proposed methodology address the practical dilemma of scoring non – financial strategic project outcomes in a public sector context?
- Does this make it more worthwhile for practitioners to implement PPM practices in the public sector as a result and why?

The research questions above drove Norrie's work, leading the author to the exploration and identification of a methodology - framework (Figure 4), which sets BSC at the fore, enhancing current practices followed in the PPM methodology. In this way it achieved a direct link between balanced scorecard and portfolio management processes, which operates in terms of alignment, emphasizing stages of prioritization and selection, so that balance and value maximization to be achieved for the portfolio.

For those reasons this study is directly relevant and aligned with the research question of this paper.

4. Research methodology:

Action research is used by the author. The general steps that he follows are: critical reflection on practice, definition of problem in practice, action experimentation and implementation of new models in practice.

Specific measures were undertaken by the researcher to ensure that this gap in knowledge transfer would not arise in the candidate organizations. Those measures had the form of 'learning loops' in the revised process designs and proactive steps.

On the other hand, this research approach can generate some indicative answers in particular settings which may be generalized in limited ways.

5. Critical evaluation of work's contribution:

Norrie's work (2006) pointed out the inherent issues that PPM faces, hence proposing and improving the practicality and likely outcomes using a revised methodology. The proposal is one of a possible range of alternative approaches that could be considered as possible improvements to common practice. The resultant conclusion was that organizations should spend more time to install a PPM process in addition to improving project outcomes by ensuring they are more strategic.

The major contribution of this research is the alignment link between strategy and projects. The methodology used for this purpose is validated in both theory and in practice and proved that it is

possible to make use of a strategic scoring model to enhance PPM methodology and to provide a framework for appropriate project selection.

These results constitute a significant breakthrough that may help organizations deal with the continuing issue of strategy execution that many appear to struggle with (Norrie, 2006).

Concurrently, the particular work questioned how capacity can define organizational strategy.

· ***Study 2: Kostelac, Vukomanovic, and Ikonc, 2012: Integrating enterprise project portfolio management with the Balanced Scorecard: A case from the pharmaceutical industry.***

1. Presentation of the proposed approach:

The aim of the research was to design a conceptual framework for integrating balanced scorecard and Enterprise project portfolio management (EPPM). The framework used BSC for setting and EPPM for implementing business strategy, by controlling and monitoring it on a strategic as well as on the project level. The result of this is a schematic representation of the relationships and synergies that are developed between balanced scorecard and enterprise project portfolio management, concluding in a final model that is successfully validated. The model applies at both the strategic and project level.

2. Most important points presented and highlighted:

There were six steps followed for the model integration: definition of SWOT factors, connection of the BSC with the strategic objectives (Strategy Map development), BSC chart for selecting options (SWOT factor impact matrix), prioritization of projects to portfolios and BSC perspectives, production of prioritization matrix and results of prioritization.

3. Research question and relevance with our specific one:

The paper focused on research questions that were dealing with how can managers, using a model, identify the strategic business objectives, how they can communicate them to the lower levels of management and finally how, they can coordinate, by using it, strategic planning through projects.

The paper's research question directly contributes to our specific research question, as it connects strategy and project portfolio management, through a balanced scorecard tool, integrating a model via the implementation of six particular steps.

4. Research methodology:

The main objective of this research is to establish a model as a combination of EPPM and BSC. A literature review was undertaken, in combination with the use and testing of appropriate software, so that the model could be further integrated. A specific company of the pharmaceutical industry was used so that results could be further validated, for a period of 5 years. An important prerequisite for the model's integration was the more rapid development of the company's project documents or PMO (Portfolio Management Office), at the strategic level.

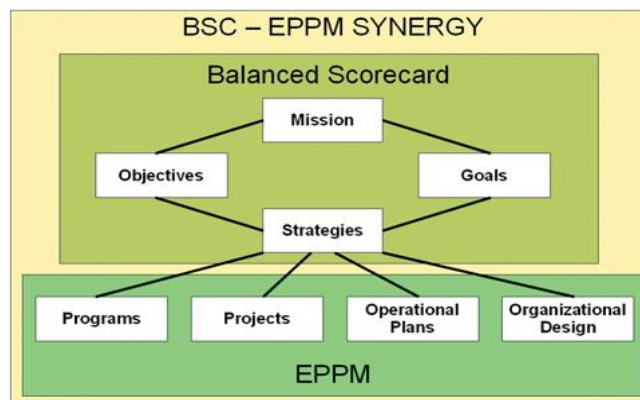
5. Critical evaluation of work's contribution:

In this work, the researchers managed to connect balanced scorecard with individual projects of project portfolios, through prioritization and selection, which comprise specific stages of portfolio management alignment process (PMI, 2006). The entire process had as a further purpose the achievement of value maximization for the shareholder perspective.

Further, the model's validation was successful; indicating that the identified synergies between BSC and PPM are able to identify strategic objectives, communicate strategic priorities to lower levels of management and through projects, to coordinate strategic planning.

Figure 4: Adopted by: Kostelac, Vukomanovic, and Ikonic, 2012

Developed synergies between BSC and EPPM



· **Study 3: Rankins, 2006:** *Aligning projects to strategy using Balanced Scorecards and Benefits Models.*

1. Presentation of the proposed approach:

The particular paper provides an alternate approach, being a benefits-focused approach to project justification and evaluation, providing a link between BSC approach at the strategic level and the Benefits Map component of MSP (Managing Successful Programs) at the tactical level.

This is characterized as a stepwise refinement process that **will improve the strategy implementation via aligning projects to strategy**. It will increase the effectiveness of the strategic project portfolio, improving the confidence of business sponsors by returning benefits that they perceive to be of value.

2. Most important points presented and highlighted:

In this study a description of the way that Strategy Maps and Benefits Models operate is given. This provides a link among these two strategic tools, which is actually achieved by replacing and incorporating Strategy Maps into Benefits Models, ensuring that benefits and initiatives are balanced across the four perspectives.

In that context, two general ways are illustrated to link the BSC with Benefits Models.

The ‘Standalone process’ is the first and simplest way. At this mode, the ‘strategy map’ is integrated and each one of the four BSC perspectives is linked with a set of objectives as integrative elements, for the purpose of continuous improvement, taking into account changes that affect organization, coming from the external environment. This method is used by organizations that keep the strategy setting process separate from the implementation planning process.

The ‘Integrated Process’ is the second linkage mode. It is considered as a more effective approach, but it entirely drops Strategy Map and replaces it with a Benefits Model. However, the four balanced scorecard perspectives continue to be considered in this approach, which is characterized as a more efficient and dynamic one, combining strategic planning and implementation monitoring.

3. Research question and comparison with our specific one:

The paper’s research question is not defined.

4. Research methodology:

The research methodology used is a literature review; as a consequence the author attempts to build on strong theoretical foundations.

5. Critical evaluation of work’s contribution:

We consider that the particular work is connected to our research question, as it illustrates links between strategy and project portfolios, through the use of the BSC tool and its possible integration with another strategic tool, the Benefits Models. *This link is examined in terms of alignment and implementation.*

The alignment link between strategy and project portfolio management is achieved through the strategic tool of ‘Strategy Map’. The map is structured according to the four perspectives of the BSC, achieving alignment between projects and strategic objectives. In that case, the particular link can be examined by taking into account parameters like design, traceability to strategic objectives, attribution of benefits to projects, step-wise refinement of scope and justification, early stakeholder engagement and buy-in, etc.

On the other hand, the implementation link between strategy and portfolio management is presented through the interconnection of the ‘Strategy Map’ with the ‘Benefits Model’ approach. Such an approach will increase the effectiveness of the strategic project portfolio and will improve the confidence of business sponsors. A significant issue is that the integration of the link between BSC and Benefits Models will consider complexities and interdependencies that are developed between projects. Also, the provided implementation link is visible, testable and measurable.

The first way of linking BSC to Benefits Models is the ‘Standalone Process’. The advantage of this approach is that it keeps the strategy setting process separate from the implementation planning process. The disadvantage is that if the implementation planning process reveals that implementation is not able to be achieved within acceptable constraints, then the strategic planning process will be at least partially invalidated, particularly in terms of timing.

The ‘Integrated Process’ is the second way of linking Strategy Maps with Benefits Models, and it is considered to be a more effective approach. Its main advantage is that the same tool is used

in strategic planning, program definition and program governance. In this way, the resulted Benefits Model incorporates entirely the four BSC perspectives.

· ***Study 4: Anagnostopoulos, Elmasides, 2010: Strategic plan in a Greek manufacturing company: A Balanced Scorecard and Strategy map implementation.***

1. Presentation of the proposed approach:

In this paper, which essentially constitutes a case study, the authors translate the strategy of a Greek tobacco manufacturing company into objectives and measures that can be clearly communicated to all units and employees. In order for this to be achieved, two basic strategic tools are implemented and combined, the Balanced Scorecard and the Strategy Map.

2. Most important points presented and highlighted:

The authors' work is inspired by the Six – Stage management system developed by Kaplan and Norton (2008), which essentially is a looped process with six stages named: develop the strategy, plan the strategy, align the organization, plan operations, monitor and learn the enterprise, and test and adapt. This work focuses on the second stage of that process (plan the strategy).

In order for the strategy to be planned, SWOT analysis first takes place, which is a strategic analysis tool that identifies company's existing strengths and weaknesses, its emerging opportunities and potential threats. This analysis, in comparison with company's statements about mission, vision and values lead to strategy formulation, which is depicted from the defined strategic axes. For the particular examined case, four strategic axes (themes) were identified.

Each strategic theme was then analyzed under the four balanced scorecard perspectives, and a set of objectives, measures, targets and initiatives was the result of this analysis, for each one of the four perspectives. The selected elements for each perspective are integrated through interviews with company's managers and the use of decision making tools (Brainstorming and Analytic Hierarchy Process – AHP).

All these are then depicted in the company's strategy map, which integrates the strategy plan, enabling strategy implementation, as various processes are interconnected in the top-down organizational structure.

3. Research question and comparison with our specific one:

The paper's research question(s) is not clearly defined.

4. Research methodology:

The particular paper is actually a case study with sound theoretical basis. The authors apply strong theoretical concepts in practice, enhancing in this way the results' validation.

5. Critical evaluation of work's contribution:

The particular research directly answers this paper's research question, as it clearly provides a link between BSC four perspectives and portfolio management. This link is expressed in terms of strategic planning, facilitating the strategy implementation process, according to the Standard of Portfolio Management (PMI, 2006). This strategic plan is expressed in the form of a strategy map (Figure 3).

Additionally, the paper's results can be considered quite valid, as they come from a combination of a case study which was conducted in a particular manufacturing company, using strong literature foundations. The results concern specific strategic objectives, measures, targets and initiatives that the company should undertake so that to enhance its vision, mission and value.

However, the particular examined paper does not propose at all any possible future research directions.

· **Study 5: Fink, Marr, and Kuhle, 2005:** *The future scorecard: combining external and internal scenarios to create strategic foresight.*

1. Presentation of the proposed approach:

In this piece of work, the authors demonstrate how external and internal future scenarios can be created, for an organization, and the way that these scenarios can be handled so that to transform balanced scorecard into a future scorecard. Such a tool will have the ability to match external opportunities and threats with the internal organization ones, during the strategy planning process.

In order the study to achieve this goal, the followed path is: description of the four-step process for the scenario development in strategic management, focus on the resource based view strategic management theory outlining how it informs scenario thinking and develops internal strategy scenarios, discussion of how strategic planning can be based on internal and external scenarios and finally how the future scorecard is built and developed, based on the strategic insights.

2. Most important points presented and highlighted:

The four phases for the scenario development in an organization are presented. These are: detection of key factors, foresight of alternative projections, calculation and scenarios formulation and analysis, mapping and interpretation of scenarios.

Similarly, the development of strategy scenarios for an organization takes place through the following four steps: identification of key elements of the strategy, development and description of future options, combination of future options with strategy scenarios and development of a strategy roadmap. In all these, the taxonomy of organizational resources is crucially important.

Further, the combination of internal and external scenarios leads to the ‘scenario-based strategic planning’, which can then be combined with the ‘strategic early warning’. The combination of these two dynamic processes leads to ‘strategic foresight’.

Finally, the authors present the result of the combination of strategy premises, critical market indicators and strategy indicators, which lead to a future scorecard, being an important addition to existing performance measurement approaches. The schematic illustration of the future scorecard and its comparison with current approaches is depicted in the following figure.

Figure 5: Adopted by: Anagnostopoulos, Elmasides, 2010

The examined company’s Strategy Map

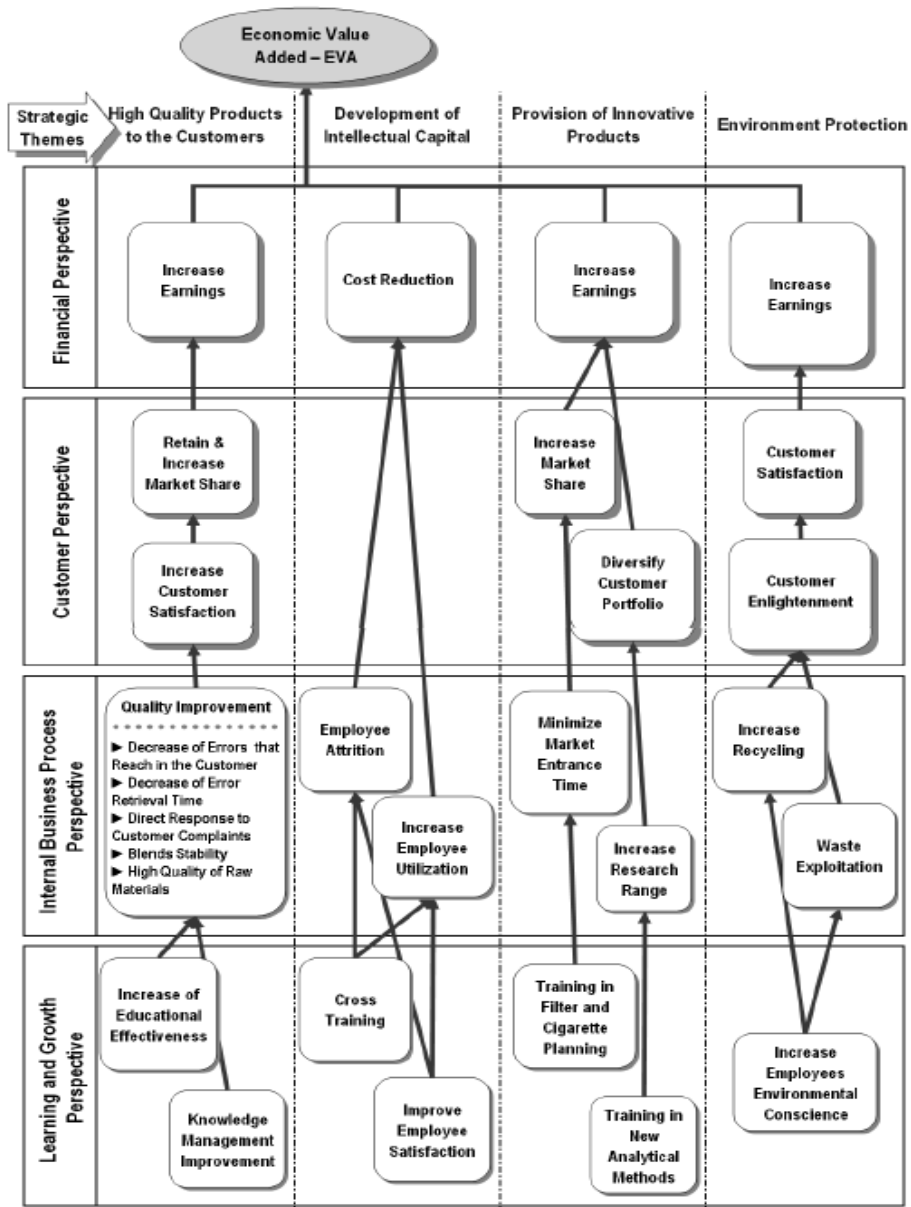
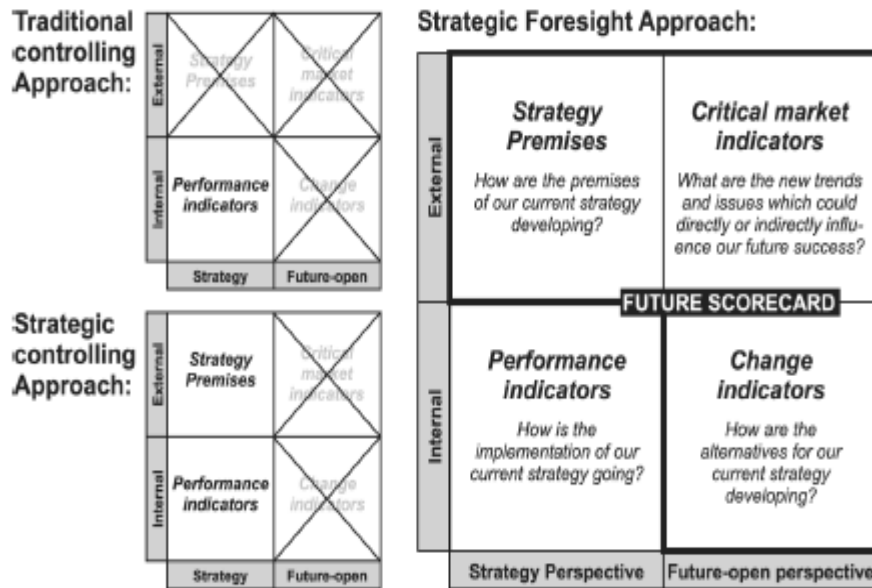


Figure 6: Source: Fink, Marr and Kuhle, 2005

Elements of a 'future scorecard'



3. Research question and comparison with our specific one:

The particular work does not present any specific research question, however, the purpose of the paper is to provide a new and systemic approach towards strategic foresight by combining external (market – based) and internal (resource – based) scenarios into a future scorecard, which can be used to describe alternative internal developments for an organization (Fink, Marr, and Kuhle, 2005).

Therefore, the specific work contributes to the answering of the paper’s research question, as it clearly provides a link between BSC, strategic management and portfolio management processes, in terms of strategic planning.

4. Research methodology:

The paper builds on the existing literature as well as on multiple case examples to illustrate the application of the future scorecard (Fink, Marr, Kuhle, 2005).

5. Critical evaluation of work’s contribution:

The work is quite significant, as it integrates a future perspective into performance measurement systems, evolving essentially the BSC tool into a future scorecard. This is achieved through linking strategic management and portfolio management processes in terms of strategic planning, introducing the applicability of scenario thinking for the internal resource – based view of the firm.

3.2.2. Most sound material with qualitative links between STRATEGY AND PORTFOLIO MANAGEMENT only

· **Study 1: Meskendahl, 2010:** *The influence of business strategy on project portfolio management and its success.*

1. Presentation of the proposed approach:

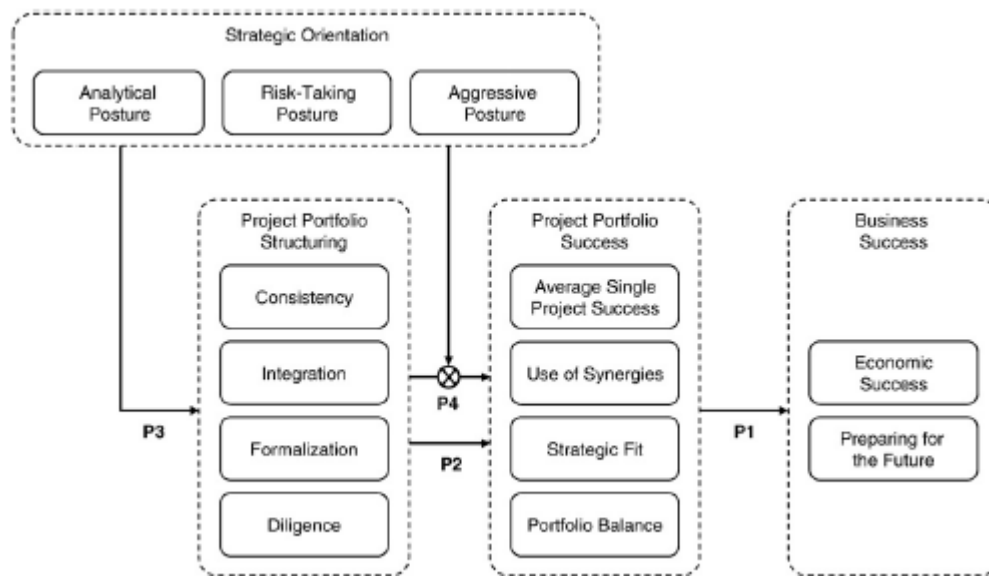
In this study, Meskendahl (2010) proposes a conceptual holistic model to qualitatively link strategic orientation and project portfolio management, using as a linchpin the crucial parameter of business success. The final model could be further used for future empirical research on the influence of strategy on project portfolio management success.

2. Most important points presented and highlighted:

According to the author's view, it is assumed that strategic orientation is a function of three postures: the analytical posture, the risk – taking and the aggressive posture. On the other hand, project portfolio management is examined under the perspectives of 'portfolio structuring' and 'portfolio success', with each one of these to be comprised from a defined number of parameters. Strategic orientation affects portfolio structuring and this in turn affects portfolio success. The achievement of portfolio success positively affects business success, which is finally defined as economic success and robust preparation for the future.

Figure 7: Adopted by: Meskendahl, 2010

Conceptual model on the relationship between strategic orientation, PPM and success



3. Research question and comparison with our specific one:

The paper does not present a well-defined research question, but its aim is clearly stated, being the attempt to close the gap between strategy formulation and strategy implementation.

This aim is quite relevant to our purpose, as the closing of the gap between strategy formulation and strategy implementation will essentially close the overall gap between projects and strategic goals.

For this reason, the present work is considered of significant importance, regarding its contribution to the answering of this paper's research question. A limitation of this study is that the BSC tool and its contribution towards this direction, is not mentioned anywhere.

4. Research methodology:

Literature review is the followed research methodology.

5. Critical evaluation of work's contribution:

The presented work illustrates a comprehensive model that covers the whole cycle from strategic planning to project portfolio management and business success. It is also very important that the particular's model design is not limited to a specific project type or industry, and consequently it is broadly applicable. However, the proposed model is not empirically validated. Further, it applies only to portfolios with internal sponsors and not to external ones, being those that are customer sponsored and contracted.

· ***Study 2: Killen et al., 2011: Advancing project and portfolio management research: Applying strategic management theories.***

1. Presentation of the proposed approach:

The paper summarizes the literature and outlines four research experiences on the application of RBV (Resource Based View), DC (Dynamic Capabilities) and AC (Absorptive Capacity) strategic management theories. It also presents their related framework to research on PM and PPM.

2. Most important points presented and highlighted:

Regarding our case, and especially for the PPM environment, it was found that DC is the most appropriate framework to use. DC theory aligns with the learning and change observed, outlining mechanisms through which PPM can contribute to competitive advantage.

DC is also the most suitable framework for investigating PPM dynamic and uncertain environments.

3. Research question and comparison with our specific one:

In this study, four research experiences were illustrated, with each one of them to investigate a different research question. For the cases that examine the PPM environment and the development of the corresponding most suitable strategic management theory, the research question was:

What is the relationship between PPM and competitive advantage? In order this question to be answered the author applied the PPP (processes, positions and paths) framework of the DC perspective (Teece et al., 1997).

4. Research methodology:

The followed research methodology is literature review, in combination with four research experiences.

5. Critical evaluation of work's contribution:

This work contributes to the development of the highlighted field by providing examples and guidance for more theory development and future research. The presented research experiences also outline the successful application of strategic management theories to a wide range of contexts.

The work also contributes to the provision of a qualitative link between strategy and projects by focusing on the application of strategic management theories to project management and project portfolio management research.

3.2.3 Comparison of results

In this section, a comparative study takes place among results presented above. Two tables are generated for this purpose. Table 5 delineates main findings and future directions for the final selected studies. Table 6, presents advantages and disadvantages of approaches and methods utilized by researchers for each particular study.

Table 5

Main findings and future directions for selected studies

<i>Study</i>	Main findings	Future Directions
<i>Norrie, 2006</i>	Direct link between balanced scorecard and portfolio management processes, in terms of alignment, emphasizing stages of prioritization and selection.	Geographical expansion of the research proposed model and deeper examination of the presented link. Future researchers may also examine the potential relationships between strategic selection of projects and risk elevation.
<i>Kostelac, Vukomanovic, Ikonc, 2012</i>	Schematic representation of the synergies developed between BSC and EPPM, concluding in a framework for setting and implementing business strategy. These synergies are achieved by the interconnection of BSC four perspectives with individual projects, through alignment and especially through prioritization and selection.	For enhancing model's robustness, it must be tested on a larger sample. Also, the followed methodologies must be integrated in a more thorough way. Finally, an attempt could be made so that further dimensions to be added. Another necessity is the integration of a model that will sufficiently select KPI's within BSC perspectives.
<i>Rankins, 2006</i>	Alignment and	Addition of case studies so

	implementation links between BSC, Benefits Models and PPM, for increasing the effectiveness of the project portfolio.	that the proposed approach to become more clear and understandable.
<i>Anagnostopoulos, Elmasides, 2010</i>	A direct link is presented between BSC and PPM, in terms of strategic planning, through the tool of Strategy Map.	The particular study does not propose any future research paths.
<i>Fink, Marr, Kuhle, 2005</i>	Identified link between BSC, strategic management and portfolio management processes, in terms of strategic planning.	No research directions are indicated, however, the possibility of improving the strategic implementation process based on the future scorecard, could be explored, so that to further close the gap between projects and strategic goals.
<i>Meskendahl, 2010</i>	Identification of a conceptual holistic model to qualitatively link strategic orientation and project portfolio management, using as a linchpin the crucial parameter of business success. In such a way it contributes to the closing of gap between strategy formulation and implementation.	Empirical validation and further model development is required. The incorporation of the BSC tool into the model framework could also be examined.
<i>Killen et. al, 2011</i>	This work offers a qualitative link between strategy and projects by focusing on the application of strategic management theories to PM and PPM research.	DC (Dynamic Capabilities) strategic management theory could be further tested in a PPM environment, possibly taking into account aspects of resource re-allocation, process improvements and optimal portfolio selection.

Table 6

Advantages and disadvantages of approaches and methods used

<i>Study</i>	Advantages of the used approach / methodology	Disadvantages of the used approach / methodology
<i>Norrie, 2006</i>	The methodology for the identification of the alignment link between strategy and projects is validated in both theory and practice.	Action research used by the author cannot produce a predictable and stable model for covering generic answers. Also, a knowledge management gap may arise from the transition of the knowledge from the researcher to the organization.
<i>Kostelac, Vukomanovic, Ikonic, 2012</i>	The concluded model is successfully validated.	The model was developed with a focus on the pharmaceutical industry only.
<i>Rankins, 2006</i>	The author presents alignment and implementation links among strategy and portfolio management. The research is enhanced by the presented conditions of continuous improvement, regarding portfolio's strategic objectives.	The paper is purely theoretical.
<i>Anagnostopoulos, Elmasides, 2010</i>	Case study with sound theoretical basis. Strong theoretical concepts are applied in practice, enhancing in this way results' validation.	
<i>Fink, Marr, Kuhle, 2005</i>	The paper builds on the existing literature as well as on multiple case examples to illustrate the application of the future scorecard.	The resulted model is not validated.
<i>Meskendahl, 2010</i>	The presented links inside the paper are expressed in the form of theoretical propositions, which can operate as guidelines, being	The proposed links between strategy and portfolio must be further tested and validated. Also, portfolios with external – customer

	more understandable and comprehensive.	sponsored and contracted projects cannot be captured by this model.
<i>Killen et. al, 2011</i>	The followed empirical research can be used so that to further investigate the qualitative link that is developed between strategy and projects in a multi – project environment.	

4 Conclusions and future directions

The current systematic literature review comprises a sample literature review focusing on the identification of a clear link between strategic and portfolio management processes, through the use of the balanced scorecard tool. This investigation proposed three consecutive hypotheses, being relevant to each other and to the paper’s research question.

For this purpose, 100 publications were reviewed through a systematic and well defined approach, setting relevant criteria (Tables 2, 3), and following continuous refinement processes.

The final refinement process (stage 5) led to 7 selected studies as the most relevant material to answer the paper’s research question.

After all, taking into account all the aforementioned and especially Tables 5 and 6, they were found researches that present direct links between STRATEGY AND BSC AND PORTFOLIO MANAGEMENT, answering in this way directly the paper’s research question. Also, the first research hypothesis is further enhanced by those studies.

Specifically, the presented links are in two cases expressed in terms of alignment, and especially in terms of selection and prioritization (Norrie, 2006) and (Kostelac, Vukomanovic and Ikonc, 2012).

However, there are cases like Rankins (2006) where the investigated link is examined in terms not only of alignment, but of implementation as well.

Other researchers like Anagnostopoulos and Elmasides (2010) and Fink, Marr and Kuhle (2005) identify and express this link in terms of strategic planning.

There were also cases where links between STRATEGY AND PORTFOLIO MANAGEMENT were presented, but with the absence of the BSC tool. In this target group of studies there are the research studies of Meskendahl (2010) and Killen et.al, 2011. The third stated research hypothesis is especially enhanced by the first one of these studies.

Therefore, from all the above it is clear that the paper's research question is answered, concluding that BSC is able to link strategic management and portfolio management processes, in terms of alignment, implementation, and strategic planning. We also have positive indications that further enhance research hypotheses 1 and 3, stating that:

•*If balanced scorecard can link strategy and portfolio management then this could contribute to closing the gap between projects and strategic goals.*

•*The gap between projects and strategy or strategic goals could be eliminated if the gap between strategy formulation and strategy implementation could further close.*

However, more and deeper research is needed for the current paper's tested research question and the relevant stated research hypotheses. Towards this direction, research hypothesis 2 needs to be thoroughly investigated, exploring the possibility of the addition of a new dimension to the original BSC tool, which would have as a purpose the elimination of the gap between projects and strategic goals. The role of human and budget resources allocation could also be investigated towards this direction.

Future research propositions of table 5 could also be taken into account.

Concluding, it could be commented that the particular work is quite significant because the identification of strategic links among BSC and portfolio management will feed the need for further research to be conducted in order these links to become more clear, distinctive and adaptable by organizations that are activated in a multi – project environment. Consequently, the hypothesis that "Clear, distinctive and adaptable -by organizations- links among BSC and portfolio management would facilitate the effectiveness and the portfolio performance, as well as, overall portfolio's balance", must be tested and validated, however current research contributed to the formulation of this hypothesis.

Therefore, any future research on the specific topic could also focus on that area.

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