

AN OPTIMISED PORTFOLIO MANAGEMENT MODEL, INCORPORATING BEST PRACTICES

Y.NAIDOO

University of Johannesburg, Faculty of Engineering and the Built Environment, South Africa
yogz.naidoo@gmail.com

J.H.C. PRETORIUS

University of Johannesburg, Faculty of Engineering and the Built Environment, South Africa
jhcpretorius@uj.ac.za

A. MARNEWICK

University of Johannesburg, Faculty of Engineering and the Built Environment, South Africa
amarnewick@uj.ac.za (Corresponding)

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ABSTRACT

Driving sustainability, optimizing return on investments and cultivating a competitive market advantage, are imperative for organizational success and growth. In order to achieve the business objectives and value proposition, effective management strategies must be efficiently implemented, monitored and controlled. Failure to do so ultimately results in financial loss due to increased capital and operational expenditure, schedule slippages, substandard delivery on quality and the depreciation of market share. This research paper investigates and discusses management strategies focusing on the integration of effective portfolio management, efficient system development life cycles and optimal project control to ultimately drive organizational sustainability and growth. With the aid of this research, optimal decisions on project/organizational venture selection can be made. Furthermore, integrating portfolio management strategies with system development life cycles and optimal project control strategies, will optimize an organizational portfolio and enhance the probability of project and organizational success.

Keywords: Sustainability, portfolio management, system development life cycles, project controls, project success.

INTRODUCTION

In today's growing competitive international and domestic environment, volatile economy, budgetary constraints and shrinking experienced workforce, optimal investment decisions coupled with the alignment of business strategies/objectives and effective project execution plans, are paramount in driving organizational success and sustainability (Miller & McCartney 2010; David 2011; Walls 2004). The materialization of business objectives and the organizational mission is usually accomplished by the successful execution of organizational initiatives and efficient delivery of services/products of the highest quality. However, in many organizations, initiatives are run in parallel and across different functions and geographies resulting in organizations struggling with "doing the right things" and "doing things right" (Ernst & Young 2012).

Too often organizations execute projects that are not in line with the business objectives/strategies, customer needs and market requirements, resulting in, but not limited to increased capital costs, decreased return on investment (ROI), decreased market share and a weakened competitive edge (Kilford & Cansoti.com 2008; Thornton 2013). A research paper by the Office of Government Commerce (UK) stated that: "In times of rapid change, budgetary constraints and high risk, it is shocking that some organisations

continue to waste effort and resources by delivering the wrong Programmes and Projects” (Kilford & Cansoti.com 2008). One such field which focusses on “doing the right things” is a field called portfolio management (Ernst & Young 2012).

Project management, however, is the field that focusses on “doing things right”. Project control is a formal process in project management which focusses on the metrics of a project such as, but not limited to: time, cost, quality and resources (Gianluca di Castri 2011). Furthermore, a system development life cycle (SDLC), that is most appropriate to the project scope and objectives should be selected. Selection of the incorrect SDLC may result in incorrect budget estimates, wrong techniques being applied and inappropriate assumptions being made (Bhunu 2007).

In order to minimize the probability of organizational venture failure, effective portfolio and project management strategies must be efficiently implemented. Understanding best practices and commonly used methods for portfolio management, SDLCs and project controls, and furthermore, integrating these three fields, will ultimately enhance the probability of project and organizational success.

Introducing and Defining Portfolio Management, SDLCs and Project Controls

Portfolio Management

Portfolio management as defined in the Project Management Institute (PMI) Standard for Portfolio Management is “The centralized management of one or more portfolios, which includes identifying, prioritizing, authorizing, managing, and controlling projects, programs, and other related work, to achieve specific strategic business objectives” (Project Management Institute 2006).

In order to achieve effective portfolio management within an organization, the development of a portfolio management execution model is required, providing a structured approach to the realization of portfolio management goals (Cooper, Edgett & Kleinschmidt 2001; Project Management Institute 2006). The PMI Standard for Portfolio Management discusses the portfolio management process which applies globally and across industry groups. The portfolio management process, as is presented in the Standard for Portfolio Management can be seen in Figure 1.

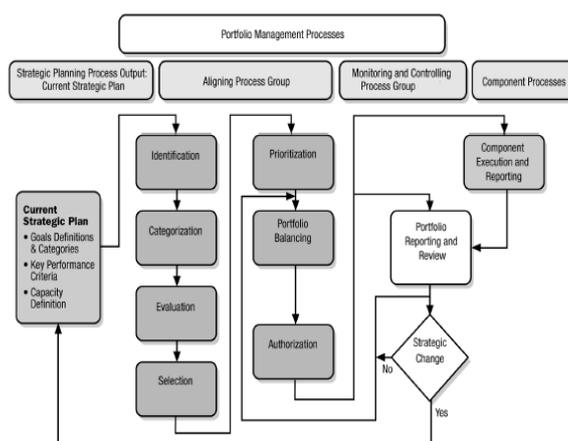


Figure 1: Portfolio management process (Project Management Institute 2006)

System Development Life Cycles

Organizations usually execute projects according to a project life cycle model. These models generally have different project phases, with each phase having specific outcomes/deliverables (Bhunu 2007). Various life cycle models exist for project execution, some of which include, the Waterfall, Incremental, Spiral and Rapid Application Development models (Bhunu 2007). The Spiral SDLC can be seen in Figure 2.

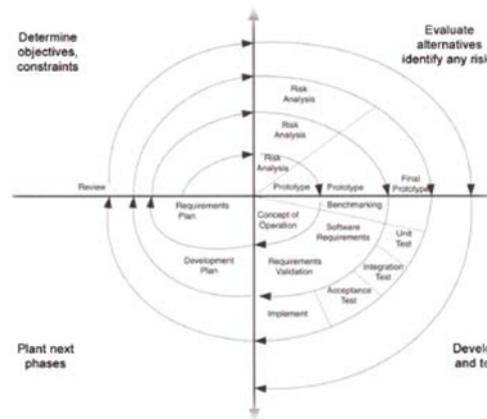


Figure 2: Spiral SDLC model (Bhunu 2007)

Project Controls

Project controls, as is defined in the Project Management Body of Knowledge (PMBOK), is “a project management function that involves comparing actual performance with planned performance and taking appropriate corrective action (or directing others to take this action) that will yield the desired outcome in the project when significant differences exist” (Duncan & Director of Standards 1996).

Various critical project control points are discussed in academic literature and the synthesized critical project control points may be seen in Figure 3.

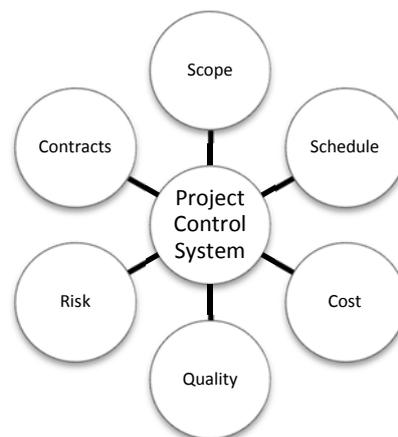


Figure 3: Project control points (Duncan & Director of Standards 1996),(DIS 2006)

Rationale of the Research

In times of budgetary constraints, volatile economies and risk, companies continue to implement projects which are not in line with the organizational mission/strategy, resulting in financial losses, ineffective

utilization of resources and decrease in market share (Kilford & Cansoti.com 2008; Thornton 2013; Ernst & Young 2012).

Furthermore, a review of relevant academic literature suggests that poor project management, in terms of the poor selection of project execution methodologies, ineffective front end loading and inefficient project controls, have seen a multitude of organizational venture failures (Gilb 2005; Bhunu 2007; Attarzadeh & Hock Ow 2008). Cost overruns, schedule slippages and substandard delivery on quality are some of the consequences of ineffective project management (Attarzadeh & Hock Ow 2008). In order to minimize the probability of organizational venture failure and to drive sustainability, best practices of, and effective integration between, portfolio management, SDLCs and project control are required.

Problem Statement and Research Objectives

The reason why organizations execute projects which are not in line with the organizational objectives is ascribed to the fact that portfolio management is a relatively new field and current best practices are unknown/followed incorrectly (Wideman 2007; Pinto 2010). The first standard for portfolio management was developed by the Project Management Institute in 2006.

Furthermore, based on the experience of one of the researcher's and supported by a paper written by Dr Solomon Bhunu, "A closer look at project life cycles", it could be seen that once projects are selected, a standard SDLC is assumed. For some projects the standard SDLC may not be the optimal choice and could result in incorrect budget estimates, wrong techniques being applied and inappropriate assumptions being made (Bhunu 2007).

Based on the experience one of the researcher's and further supporting papers written by Iman Attarzadeh and Siew Hock Ow "Project management practices: The criteria for success or failure" and R. Mudau and L. Pretorius in "Project control and risk management for project success", it could be seen that, due to insufficient focus on project controls throughout the SDLCs, many projects which have been executed over budget and beyond schedule.

Identifying projects that are in line with the strategic business objectives, incorporating best practices, SDLCs and critical control points (based on SDLC selected points) for projects in the early phases of the portfolio management process, will ultimately result in enhanced project prioritization, selection and execution, driving organizational growth and sustainability.

Based on the research problems, the objectives the research sets out to achieve were developed. The research objectives are as follows:

- i. Highlight best practices for portfolio management, SDLCs and project controls;
- ii. Identify and discuss various commonly used models for portfolio management, SDLCs and project controls, and
- iii. Interlink portfolio management, SDLC and project controls to form an integrated portfolio management solution.

Research Questions

Based on the problem highlighted above, the research is structured with the aim of answering the following two questions.

- i. What are current best practices and commonly used methods for portfolio management, SDLC and project controls?
 - a. What are commonly used models/methods for portfolio management and SDLCs, and critical project control points?
 - b. Is there a standard process for portfolio management?
 - c. How does ineffective portfolio and project management affect project and organizational performance?
- ii. Can the project portfolio management process be optimized so as to create an enhanced prioritized and selected basket of projects? Optimized meaning, that best practices (from PMI and other literature) and commonly used methods, (financial, scoring, bubble diagrams) are incorporated into the portfolio management process, resulting in a selected basket of projects with their corresponding SDLC and project control points.

METHODOLOGY

Based on the objectives, the research set out to lay a solid foundation on which the three research fields could build. A wide variety of academic literature and studies were used to build this foundation.

In order to fully understand the concepts of portfolio management, the PMI Standard for Portfolio Management, as well as a variety of academic literature was analyzed. The goals and benefits of successful portfolio management were discussed. Furthermore, a process for portfolio management, as was highlighted in the PMI Standard for Portfolio Management, was discussed. Various commonly used strategies and models for portfolio management, based on academic research and studies, were also discussed.

Various SDLCs and critical project control points were then discussed, with the aid of academic literature and the PMBOK. The commonly used SDLCs were highlighted and discussed, further providing selection criteria for SLDCs. Critical project control points and the techniques thereof were then discussed.

Two case studies, which highlight the current portfolio management processes and the selection/execution of organizational ventures in various organizations, were then presented. The case studies aim to identify and discuss the effects of poor portfolio and project management processes. Following a case study research methodology, as was described in Yin (2009), each case study was analyzed in detail and the findings reported, so as to provide evidence of the validity of the research problems.

The article is then concluded with an overview of the background into the research, research problem and research objectives. Furthermore, the realization of the research objectives and answers to the research questions were discussed. Recommendations based on the research outcomes were then provided with the intention of driving continuous improvement.

CASE STUDY RESEARCH

In order to validate the research problems and gain further insight into the management strategies currently used in various organizations, a detailed case study methodology was utilized. With the aid of the case studies, in depth knowledge of the problem was obtained, enabling the researchers to reach conclusive findings to the specified research questions.

Analysis of Case Studies

Two case studies from various organizations were presented. For case study 1, two companies were looked at, a company specializing in paper (Company X), (Pinto 2010) and a company that manufactures cables (Company Y) (Milosevic, Patanakul & Srivannaboon 2010). Case study 2 focused on an international petrochemical company (Company Z).

Both case studies were analyzed and the root causes of the major issues experienced were evident. Some of the critical findings from the case studies included the following:

- i. Improper project management processes to develop commercial products quickly were identified. Delivery methodologies were not in line with the development strategy and organizational goal.
- ii. Best practices for portfolio management were not implemented in Company X, Y or Z. Company X did not have a portfolio management process and furthermore, project selection was almost entirely based on a financial methodology Net Present Value (NPV). This approach in establishing an organizational portfolio resulted in a diverse number of mismatched projects, which ultimately resulted in project failure.
- iii. Due to the absence of a portfolio management process, projects were not aligned to the organizational strategic mission, lessons learnt from projects were not transferable, and the technical abilities of the organization were not assessed.
- iv. Due to the fact that there was no formal process for portfolio management, ineffective utilization of resources took place. This meant that valuable time and money was being spent on incorrect projects.
- v. The SDLCs chosen for the execution of the projects were not the optimal choices based on the scope of the specific projects. A lot of time was spent in the generation of documentation and design investigations without prototyping a design to verify the feasibility. Furthermore, uncertainties in the cost estimates were evident due to the uncertainty of the successful implementation of the proposal.

Based on the analysis of the case studies, it could be seen that a formal process for portfolio management, which incorporated best practices, is imperative for achieving project success in an organization. Furthermore, the selection of an SDLC model with corresponding project controls, based on the initiatives, objectives and scope, is necessary early on in the selection process. The analysis of the case studies revealed that due to the lack of portfolio management processes, the incorrect selection of SLDCs and poor project controls, projects were delivered late, over budget, not in line with organizational strategy and ultimately resulted in project failure. Based on the analysis of the case studies, as well as the findings from the research, an enhanced model for portfolio management was proposed.

RESULTS

Based on the discussions in the research, as well as the case studies presented, it can be seen that a formal process for portfolio management, incorporating best practices, is imperative for an organization to achieve project success.

The best practices identified from a variety of academic literature included the following actions:

- i. Identify the organizational goal of portfolio management. Organizational goals of portfolio management were based on academic literature.
- ii. Follow a process for portfolio management. A portfolio management process is defined in the PMI Standard for Portfolio Management.
- iii. Include key stakeholders throughout the portfolio management process.
- iv. Understand the commonly used models and methods for portfolio management, SDLCs and project control.
- v. Incorporate lessons learnt from previous projects early in the portfolio management process.
- vi. Clearly define the scope of all initiatives.
- vii. Include SDLC selection and project control points in the portfolio management process.
- viii. Understand some of the main challenges in portfolio management and develop mitigation strategies accordingly.
- ix. Select the most appropriate SDLC based on the scope and nature of the initiative.
- x. Understand critical project control points as well as management techniques for each point.
- xi. Prioritize project control points based on the specific SDLC selected.

Commonly used models/methods for portfolio management, SDLCs and critical project controls points included:

- i. Portfolio management:
 - a. Financial,
 - b. Scoring models,
 - c. Bubble diagrams,
 - d. Strategic buckets,
 - e. Checklists, and
 - f. Resource capacity analysis.
- ii. System Development Life Cycles:
 - a. Waterfall,
 - b. Spiral,
 - c. Incremental,
 - d. Rapid application development (RAD),
 - e. Evolutionary, and
 - f. Agile.
- iii. Critical Project Control Points:
 - a. Scope definition and control,

- b. Schedule control,
- c. Cost control,
- d. Quality control,
- e. Risk control, and
- f. Contracts control.

Standard process for portfolio management. It is important to acknowledge that a standard process for portfolio management does exist and is defined in the PMI Standard for Portfolio Management.

Effect of ineffective portfolio and project management on project and organizational performance. Based on the analysis of the two case studies, cross-case synthesis and pattern matching revealed that the absence of best practices for portfolio management and project execution resulted in project failure.

Based on the findings from a variety of academic literature, an optimized model for the portfolio management process was proposed. The model presented in Figure 4 integrates best practices, SDLCs and project controls into the PMI Standard Process for Portfolio Management. The aim is to create an optimized portfolio management process to enhance the probability of project and organizational success.

The proposed portfolio management model includes the selection of SDLCs and prioritized project control points, as well as commonly used methods for certain steps to be taken. The proposed model uses the PMI portfolio management process as a backbone. However, with the proposed model optimal SDLCs with prioritized project control points may now be discussed amongst all key stakeholders and the best option selected. In this way an optimal execution strategy for initiatives is established, further achieving alignment with the organizational strategy and mission.

The aim of the proposed model is to create an optimized portfolio management process, so as to enhance the probability of project and organizational success.

Discussion of Results

Understanding best practices and commonly used models for portfolio management, SDLCs and project control are important for the efficient implementation of the specific strategy. The best practices, as well as the commonly used models have been derived from various academic studies and literature from different organizations. As was stated above, the portfolio management process, which was specified in the PMI Standard for Portfolio Management, is a globally accepted process for portfolio management and is applicable across industry groups. It could be seen that the best practices identified above will not pose any problems to the implementation of a portfolio management strategy, but will aid in ensuring that the probability of successful implementation is enhanced.

Furthermore, based on the analysis of the results, it could be seen that understanding the various SDLCs and project control points will ultimately allow the organization to best fit the organizational initiative to the most appropriate execution strategy, thus further creating alignment to the organizational strategy and objectives.

As the portfolio management process proposed in Figure 4 is based on the PMI Standard, the addition of SDLCs and project control points does not change the overall intent of the process. Through the addition of SDLCs and project control points the process is optimized and each initiative will be selected complete with

the most appropriate execution strategy. Therefore the integration of portfolio management, SDLCs and project controls may be achieved with the aid of the process proposed in Figure 4, further enhancing the probability of project and organizational success.

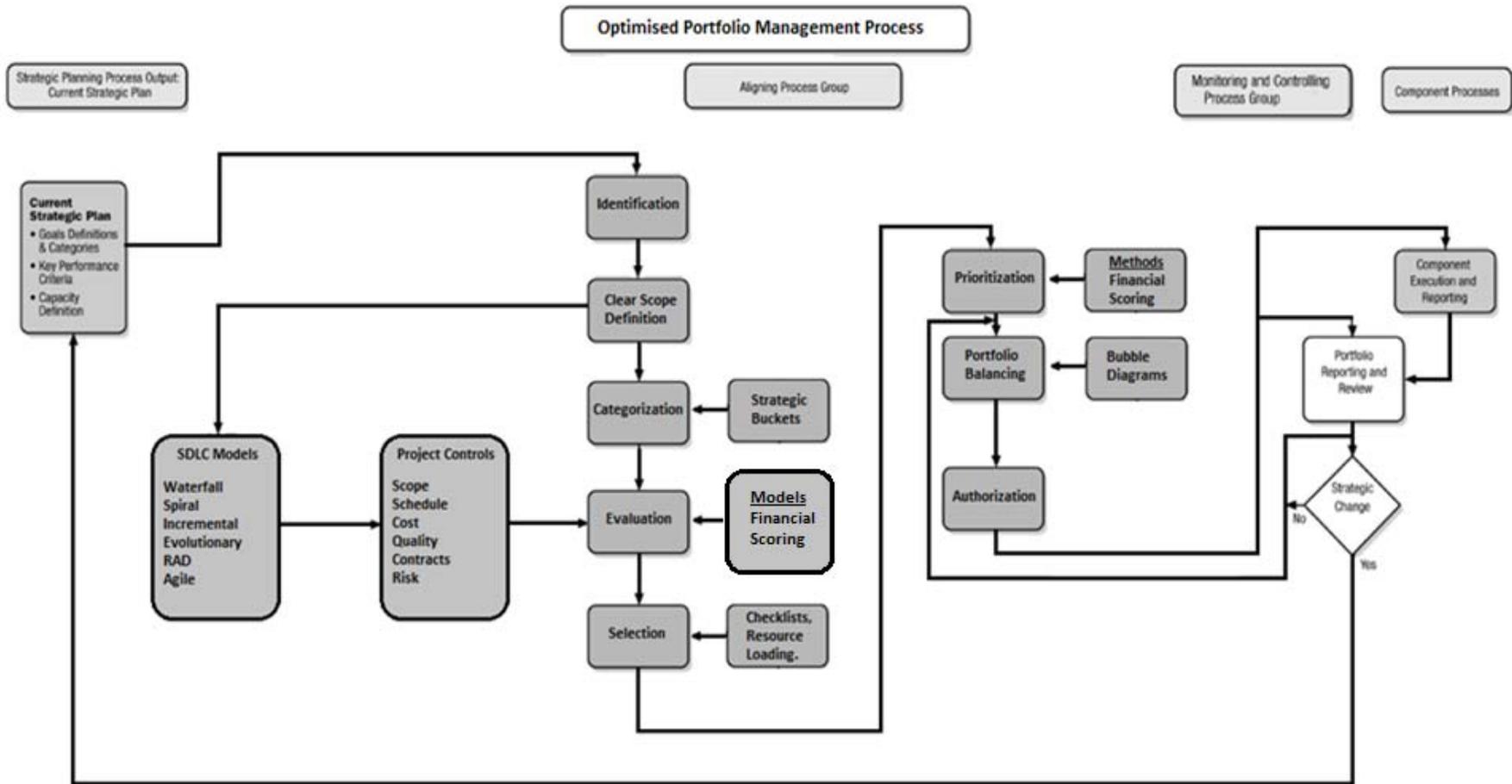


Figure 4: Proposed portfolio management process model

CONCLUSION

Based on the findings in the research, as well as the proposal of a model for the portfolio management process, there are recommendations that will aid the drive to achieve continuous improvement. These recommendations are discussed below.

Recommendation 1: Test the proposed portfolio management process

The effectiveness of the proposed model can only be determined by implementation. Hence, it is recommended that the proposed model be tested on a few baskets of projects to determine the effectiveness, as well as provide feedback on issues experienced. With the feedback provided from the testing, the model may be further enhanced to eliminate any issues experienced.

Recommendation 2: Build on best practices and methods

Standards and specifications are constantly being updated. Hence, best practices and further methods may be documented. It is recommended that research into additional SDLCs and best practices be conducted, and the selection criteria for SDLCs be further optimized. This information may then be integrated into the proposed portfolio management process.

Recommendation 3: Investigate the viability of a fully integrated portfolio and project management system

In order to drive innovation and continuous improvement it is recommended that the viability of a fully integrated portfolio and project management system be investigated. The proposed portfolio management process should be programmed in such a manner that for each step of the process, guidelines, best practices and templates for commonly used models are generated. The users may then complete each step electronically using the guidelines and methodology templates. Organizational goals, mission and strategies may be built into the programmed model. On completion of the portfolio management process, the system should be capable of populating a Project Management Office (PMO) database with the current and new organizational initiatives complete with the selected SDLC and project control points. Models for each SDLC, with corresponding step by step requirements, may be programmed into the PMO database system to enhance the probability of the successful execution of the initiative.

In today's growing competitive international and domestic environment, volatile economy, budgetary constraints and shrinking experienced workforce, optimal investment decisions coupled with the alignment of business strategies/objectives and effective project execution plans, are paramount in driving organizational success and sustainability (Walls 2004). The materialization of business objectives and the organizational mission are usually accomplished by the successful execution of organizational initiatives and efficient delivery of services/products of the highest quality. However, in many organizations, initiatives are run in parallel and across different functions and geographies resulting in organizations struggling with "doing the right things" and "doing things right" (Ernst & Young 2012).

Too often, organizations execute projects that are not in line with the business objectives/strategies, customer needs and market requirements, resulting in, but not limited to increased capital costs, decreased ROI, decreased market share and a weakened competitive edge (Kilford & Cansoti.com 2008; Thornton 2013).

Furthermore, as was highlighted in an International Journal of Scientific & Engineering Research paper, a larger number of projects fail and billions are spent on failed projects. Lack of and poor selection processes of SDLCs and project controls are the top reasons of such failure (Sharma 2011).

It can be seen that with the aid of the proposed model and research in the research, the issues experienced by the organizations discussed in the case study, would be eliminated. Furthermore, with the aid of this mini research, best practices and commonly used models and methods for portfolio management, SDLCs and critical project control points, may be understood, further driving the efficient execution of the portfolio and project management process. This further addresses the problems specified in the original research problem statement.

Thus, based on the findings in the research, it can be concluded that the questions the research set out to answer were clearly answered. Furthermore, each objective of this research has been achieved. Using the information provided in this research the original problems specified in the research problem may be resolved. It may be concluded that with the aid of a formal portfolio management process, coupled with best practices and optimal execution strategies, an optimized organizational portfolio may be established, enhancing the probability of project and organizational success.

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