The Analysis of Project Portfolio Management (PPM) Implementation: Case Study of Large Japanese Car Manufacturers in Europe

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ABSTRACT

In the last four decades, the main objectives of project management have been successful completion of projects, successful delivery of project content, and satisfaction of stakeholders of the project. Much of the attention has been dedicated towards problems regarding project time, resource allocation, cost of project, and quality of outcomes. This is a qualitative study based on interviews that aims to emphasise on Project Portfolio Management in contemporary business environment. The study also highlighted relationship between PPM and corporate strategy. This study explained factors that affect implementation of PPM and also presented success criteria of PPM. Finally the study investigates whether PPM in Japan within the context of automobile industry can be applied in European demographics and concluded that for a number of factors arising out of cultural differences PPM in Japan cannot be applied in European context.
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CHAPTER 1: INTRODUCTION

1.1. Introduction

In the contemporary business environment today globalization has introduced a higher competition level, one that has culminated businesses into revising their competitive strategies and emulating certain high-end organizations. In the words of Beringer, Jonas and Kock (2013, p.32) internationalization has increased the dependency of organizations on their globalization strategies. In addition to being reliant on their globalization strategies, new organization are also adopting and implementing the process of Project Portfolio Management. According to Burgenmeier and Mucchielli (2013) the concept of PPM or Project Portfolio Management is considered to be the centralized management of technology, process and methods which are primarily used by project management officers and managers to critically evaluate their decision making process. The project portfolio management technique assists the project managers to evaluate the portfolio of the products and check the reliability from the perspective of growth in the company and its profitability (Cooper, Edgett and Kleinschmidt, 2006).

Over the years, there has been numerous research studies which have outlined the problems that companies are facing amidst their decisions to expand their operations globally and integrate the essence of globalization in their corporate strategies and aims and objectives. According to Martinsuo (2013, p.796) the most recurring problem that international companies and organizations face include multiple projects being active at the same time and most of the projects that are being deployed by the organization that are the main source of discomfort to the organization itself. In addition, another research study authored by Teller et al. (2012, p.602) concluded that most of the organizations are not undertaking a comprehensive return on
investment analysis with regards to the projects they are undertaking and this has been one of the key reasons as to why the organizations have failed to complete all their on-going projects on time.

In addition to contemplating upon the analysis of project portfolio management (PPM) implementation, the following research study has also shed light upon the car manufacturing sector in Europe, in contention with leading Japanese Car Manufacturers in Europe. According to Unger, Gemunden and Aubry (2012, p.609), the development and manufacturing of transport vehicles, especially cars has increased over time, leading to most of the manufactures in the respective industry to adopt the notion of project portfolio management. Therefore, in light of the following assessment, the current research study was carried out with the purpose of analysing the implementation of project portfolio management with respect to three large Japanese car manufacturers in Europe; Honda, Toyota and Suzuki.

1.2. Background of Japanese Car Manufacturers in Europe

According to Schmitt and Van Biesebroeck (2013, p.476), at present the European car market is becoming increasingly saturated as internationalization and globalization both have allowed the number of competitors in the respective industry to increase. The automobile industry market in Europe is intensely competitive and therefore in their pursuance to retain and ensure the long-term competitive edge, the companies have prioritized their strategy towards the management of the portfolios to meet their annual targets (Nepal, Rathore & Sharma, 2013, p.152). A similar scenario has been observed with respect to the operations of large Japanese car manufacturers in Europe. In an analysis provided by Maniak and Midler (2014, p.147) most of
the car manufacturers in Europe have adopted the project portfolio management market entry method within their international expansion process.

Furthermore, most of the Japanese car manufacturing companies operating out of UK, including domestic manufacturers as well, are generating profits through the means of delivering their projects on time (Lundin et al, 2015). In an overview provided by Lamratanakul (2013, p.11) Toyota was the pioneer in establishing different PMO, project management offices, within their European region. The sole reason as to why Toyota established different PMOs in their European manufacturing plants was due to the evident and recurring project management problems that it was facing Nepal, (Rathore and Sharma, 2013, p.151). Emulating the success that Toyota garnered through their decision to formulate smaller more tactical PMOs, rivals Suzuki and Honda also decided to establish their PMOs in order to increased their project management efficiency ratio and benefit form better economies of scale.

1.3. Contextual Background

In the words of Gutiérrez and Magnusson (2014, p.33) portfolio management is one the most important aspect in the strategic decision making framework of an organization since it can have a direct impact on the overall performance of the firm. Moreover, through the use of portfolio management, organizations can allocate their resources strategically and in a more comprehensive manner, thus, reducing wastage of resources and increasing the chances of benefiting from economies of scale (Heising, 2012, p.584). In an analysis provided by Gemunden, Killen and Kock (2013, p.107) Portfolio management is an adequate tool in order for the managers to forecast future decisions and ensure that the imminent and the soon to be operational projects of an organization are progressing as planned. In addition, due the global
business market being overly competitive and dynamic in nature, organizations and businesses alike are required to constantly evolve and grow their portfolios as there is new information available within a short period of time (Burgenmeier, and Mucchielli, 2013).

In a recent research study authored by De-Reyck, Grushka-Cockayne and Sloper (2015, p.19) it was observed that there is a significant and positive correlation between the independent variable of Project Portfolio Management process and other dependent variables of organizational performance. Through the use of sufficient anecdotal evidence, the researchers were able to conclude that effective project portfolio management practices and procedures can allows organizations to become productive and effective in their performance. The results of the study further predicated that since the scope of project portfolio management has evolved over time, the rules and regulations that govern the following notion have also evolved, thus increasing the emphasis on effective PPM processes and policies within an organization (De-Reyck, Grushka-Cockayne & Sloper, 2015, p.29).

Similar to the findings and analysis presented by De-Reyck, Grushka-Cockayne and Sloper (2015, p.19), author Iamratanakul (2013, p.3) also undertook a similar research study which was used to test and highlight the successful traits which are necessary for the success of a project portfolio management. Through the use of primary data collection method and obtaining quantitative information, the researcher was able to establish credible premise that factors like the expertise and experience of project manager, Return on Investment Analysis and the timeframe of the project are essential to the success of project portfolio management process (Iamratanakul, 2013, p.11).

In addition to the results presented by Iamratanakul (2013, p.2), a similar research study was authored by Meskendahl (2010, p.810) where the researcher evaluated certain key attributes
and characteristics that are essential for the success of the project portfolio management. Through the use of qualitative research design and primary data collection method, the researchers were able to highlight certain key attributes pertaining to the effectiveness of project portfolio management which include utilizing appropriate project portfolio management principles, establish key performance management structures, and institute effective process. The researchers further concluded that the field of project portfolio management is dynamic in nature one that requires astute decision making and proliferation.

1.4. Research Problem

According to Laslo (2010, p.611) the recent business environment has become increasingly competitive and requires dynamism on the part of the manager of an organization to make swift and effective decision making. In this regard, Shi (2011, p.297) contemplated that the concept of project portfolio management offers great dexterity to the users and allows them to make effective decision making a more effective and efficient process. However, while the benefits of using project portfolio management are multiple, the problem arises in its implementation and use. As mentioned by Buys and Stander (2010, p.57) due to the intricate nature and the process of project portfolio management, many organizations either fail to successfully implement it or lack the necessary expertise to execute the process of project portfolio management.

Furthermore, according to Gemunden, Killen and Kock (2013, p.110) the improper application of project portfolio management can be detrimental to the cause of an organization in terms of profitability and wastage of resources, resources which could have utilized for a more effective reason. Additionally, Maniak and Midler (2014, p.147) also highlighted that project
Portfolio management requires certain key expertise and generally such expertise may not be possessed by the employees of an organization. Therefore, in order to meet the requirements of project portfolio management, firms are first required to hire technical employees, who specialize in the field of PPM.

Hence, in light of the following assessment the research problem for the following study was successful implementation of project portfolio management and the repressions that an organization would have to face in case of the company’s failure to execute the operations of PPM successfully.

1.5. Aims and Objectives

The main objective of the study is to analyse project portfolio management and how it has been implemented in the automobile industry of the Europe with special attention paid to three Large Japanese Car manufacturers; Toyota, Honda and Suzuki.

- To study the relationship between corporate strategy and Project Portfolio management.
- To identify the factors that facilitates the successful implementation of Project Portfolio Management in the automobile industry.
- To examine the key success criteria for the Project Portfolio Management in the automobile industry.
- To study how the concept of Project Portfolio Management (PPM), from the perspective of Japanese car manufacturers in Europe, be altered for it to become more effective in the European region.
1.6. Research Questions

- What is the relationship between corporate strategy and project portfolio management?
- What are some of the key factors that can facilitate the successful implementation of Project Portfolio Management in the automobile industry of Europe?
- What are some of the key success criteria for the Project Portfolio Management in the automobile industry of Europe for Japanese Manufacturers?
- How can the concept of Project Portfolio Management (PPM), from the perspective of Japanese car manufacturers in Europe, be altered for it to become more effective in the European region?

1.7. Rationale of Study

As highlighted under the heading of research problem, within the following research study, the main issue that the researcher has addressed in the following study reflects upon an analysis of the implementation of project portfolio management within the European region, in reference with Japanese car manufacturers working in the said territory. As mentioned by Nepal, Rathore and Sharma (2013, p.154), organizations on an international platform are facing multiple issues, of contrasting magnitude, within the field of portfolio management and due to this are unable to achieve their desired corporate objectives and organizational milestones. In the context of project portfolio management, Schmitt and Van-Biesebroeck (2013, p.476) narrated and defined certain issues which can hurdle the successful implementation of project portfolio management including risk Management, change management and financial management. Since all of the processes, mentioned above, are analysed and evaluated through the doctrine of project
Project Portfolio Management

portfolio management and therefore have an impact on the performance of an organization (Heising, 2012, p.584).

Therefore, this research has highlighted the issue and challenges of project portfolio management and its implementation in the automobile sector of Europe. This research can help to explore the portfolio management in the project-driven organizations in terms of the customers and R&D projects. It will also examine that to what extent project portfolio management is implemented in the organization and if it is implemented then how PPM can contribute to the success of the company.

1.8. Significance of Study

Before undertaking any research study, it is important to highlight the significance that the research study holds culminates in to the future application of the research study. With respect to the following research study, the researcher intended to carry out a thorough analysis of Project Portfolio Management (PPM) and the successful implementation of the following notion. In addition to addressing and undertaking an analysis of project portfolio management the researcher also utilized a case study research strategy to further strengthen the results and recommendation of the following study. The case study for the following study was Japanese car manufacturers that are using the process of project portfolio management as their modus operandi in the European region. The results and recommendations put forth by the following research study can be essential for the European car manufacturing industry and its participants who wish to adapt and utilize the concept of project portfolio management.

In addition, another key significance of the following research study is in terms of key characteristics for the successful implementation of project portfolio management. The results of
the following study can increase the existing literature domain that has been previously compiled by different researches on the topic of project portfolio management.

1.9. Structure of Study

Chapter One: which is titled as the introductory chapter, has highlighted certain key headings such as contextual background, rationale of study, significance of the study, research aims and objectives, research questions and the problem area that the study has addressed. Through the compilation of the following chapter the researcher was able to set the study in motion and build a coherent and comprehensive primary understanding of the research study.

Chapter Two: of the following research study has been titled as the literature review and undertakes a detailed secondary analysis of the research topic and highlights all the findings that have been presented by other scholars and researchers in contention with the topic of the following study. In addition, the following chapter inundates the use of secondary information obtained from resources like peer reviewed article and research journals along with getting information from accessible electronic libraries. Based on the secondary results obtained within the literature review chapter, the researcher was able to formulate a theoretical and conceptual framework.

Chapter Three: is referred to as the research methodology chapter and incubates certain specific methodological headings such as research paradigm, research strategy, research approach, research design, ethical considerations, and reliability and validity of this study.

Chapter Four: of the following research paper has been termed as the data analysis and discussing chapter which includes the interpreting and presentation of primary information in a systematic and appropriate manner. The primary research conducted is quantitative and the
results and findings presented in chapter 4 have also been discussed within the context of results and findings of secondary research.

**Chapter 5:** presents major conclusions drawn in this study on the basis of primary and secondary research. Based on these conclusions, this study makes recommendations in last chapter. This study ends with research limitations as well as future research opportunities.
CHAPTER 2: LITERATURE REVIEW

2.1. Introduction

This chapter presents review of literature or secondary research conducted in this study. The purpose of this chapter is to provide a succinct and comprehensive summary of existing studies focusing on PPM for the reader to understand the purpose of research question of this study. The chapter begins with describing the notion PPM followed by a brief discussion of objectives of PPM. The chapter then continues to explain PPM framework. The discussion then focuses on factors that affect PPM and its effectiveness in an organisation. The chapter then continues to present discussion of tools and techniques used in PPM. Furthermore, this chapter also explains various success criteria of PPM. This discussion is followed by a brief discussion of challenges faced by companies to implement effective PPM. Finally the chapter ends with a summary of secondary research emphasising the significant of PPM in today’s business environment.

2.2. Project Portfolio Management

In the last four decades, the main objectives of project management have been successful completion of projects, successful delivery of project content, and satisfaction of stakeholders of the project. Much of the attention has been dedicated towards problems regarding project time, resource allocation, cost of project, and quality of outcomes (Turner, 2014b). Although, project managers may use project management methodologies, tools and techniques to complete projects while meeting the aforementioned objectives it has been noticed by academicians and practitioners that success of a project success does not necessarily ensure success of business (Kodukula, 2012).
Within this context, Levine explains similar situation by emphasising that senior management wondered why successful projects have failed to add value to the organisation and also the project did not meet the strategic aims and objectives of the organisation. They focused and succeeded to complete project within the allocated time and budget and still the results produced did not met the expectation of senior management thus failed to satisfy other stakeholders of the project (Levine, 2007). Levine emphasised the schism by arguing that there are also projects that never complete or if completed fail to deliver desirable outcome. In the end, purviews question whether senior management should have approved the project in the first place as they now proved to be of little value to the company. These concern or schism led to the development of the notion project portfolio management (Levine, 2007).

Today businesses do not require project managers to deliver successful projects but they also expect that they deliver projects that are right for the business. Businesses expect a strategic partnership between the project-oriented and the business-oriented people under the umbrella of Project portfolio management. The focus of the project-oriented people is time, budget, and deliverables as key success factors of projects and performance indicators of project managers no matter if the project has a true and a positive impact on business performance (Zhao, et al., 2012). On the other hand, the focus of business-oriented people is the contribution of the project in achieving the broader set of organisational objectives. They focus on the contribution of projects in organisational growth, revenues & cash flows, competitive advantage, effective and efficient allocation of resources. Overall they focus on measurable benefits, increase in revenue, and project return on investment. Project time may not be as relevant for them as it is for project-oriented people (Turner, 2014a).
PMI (2006) defined PPM as “the management of collection of projects and programs in which a company invests to implement its strategy in order to maximize value.” (PMI, 2006, p.5)

Cooper et.al. (1997) defined PPM as, “A dynamic process, whereby a business’s list of active new product (and R&D) projects is constantly updated and revised. In this process, new projects are evaluated, selected and prioritized; existing projects may be accelerated, killed or de-prioritized; and resources are allocated and reallocated to the active projects.” (Cooper et.al., 1997, p.17) The author argued that portfolio management refers to selecting portfolio of projects for development of new products that accomplish following organisational goals:

- Maximize portfolio value;
- Maintain balance of all projects or maintain a balanced portfolio;
- Must be connected to strategy i.e. integration of portfolio with organisational strategy;

A project portfolio has various components and they share some common features (Unger, Gemünden, and Aubry, 2012):

- Each of them is an investment made by the organisation;
- They should be aligned strategic goals and objectives of the firm;
- There must be some distinct features so that organisation could group them to maximise management’s effectiveness;
- The project components should be measurable and quantifiable so that they can be prioritised;

The PMBOK explain this context in the following words, “Project management exists in a broader context that includes program management, portfolio management and project management office. Frequently, there is a hierarchy of strategic plan, portfolio, program, project
and subproject, in which a program consisting of several associated projects will contribute to the achievement of a strategic plan.” (PMI, 2006, p.37) In this extract the important factors are: there must be a recognised hierarchy connecting projects to strategy. Following figure shows this hierarchical connection.

![Hierarchical Linkage](http://pmstudent.com/linking-business-strategy-to-project-strategy)

2.3. Aims and Objectives of PPM

The fundamental objectives of PPM are (Teller, et al., 2012)

1. Getting portfolio to be strategically aligned.
2. Get the maximum value of the portfolio.
3. Striking the right balance (suitable) between projects running.
4. Run the appropriate number of projects.
5. Achieving customer satisfaction, to the extent that the results obtained from the projects undertaken more responsive to their requirements and needs.
6. Communicate priorities, clearly and precisely, staff from all areas of the organization.

2.3.1. Align the project portfolio

The portfolio of projects is the concrete expression of the long term strategy of the company. What and how resources are allocated shows the strategic priorities of the company. The aim of the investments in projects undertaken by the company is to effectively match its business objectives and strategies (Yaning, 2011). Thus it can be said that the projects in the portfolio are key components of business strategy. The combination or mixture of projects implemented in the company reflects its strategic priorities (Beringer, Jonas, and Kock, 2013).

2.3.2. Get the maximum value of the portfolio

In order to achieve the financial and strategic goals of the organisation, careful evaluation of proposed projects for inclusion in the portfolio is essential. This evaluation sorts project to be included and projects to be excluded. PPM seeks to maximize the productivity of R&D and technological innovation, defining how the company can invest the resources more effectively in order to pursue its aims and objectives (Wu, et al., 2012). To maximize the value of the portfolio of projects usually financial analysis tools or models are used to evaluate and prioritise alternate projects. These financial tools and techniques evaluate profitability or return on projects. The aim is to identify and include projects with maximum value in the portfolio (Martinsuo, 2013).

One of the examples of such financial tools and technique is Net Present Value (NPV). The management calculates net present value of all projects and constrains an index by allocating each NPV between expenditure on research and development. The next step is to assess the
degree to which high NPV projects are aligned with strategic aims and objectives (Lerch and Spieth, 2013). Another example is the Scoring model that evaluates the most important factors based on one or more evaluation criteria. These factors and criteria are graded by specialists of the company, using a scale (1-5 for example, where 1 means no importance to 5 equals extremely important). The values are summed to obtain the attractiveness of each project (Heising, 2012).

2.3.3. Achieving the right balance of projects

The composition of the portfolio is determined by the nature of the business, the strategic direction of the company and the type of projects to be executed. It is that the projects implemented are properly balanced and are in accordance to the number of parameters defined by the company (Voss, 2012). Examples of projects and parameters used to balance are (Voss, 2012; Unger, et al., 2012):

- Projects of long, medium and low term
- Projects of high, medium and low risk
- Projects improving current products and developing new products
- Basic research projects, development of new products or processes, process improvement, technology acquisition
- Projects implemented internally and externally

2.3.4. To Maximise Customer Satisfaction

One of the aims of PPM is to maximise customer satisfaction which can only be achieved if portfolio contains projects that focus on developing products and service that are focused in
meeting and exceeding customers’ expectations. Furthermore, besides customers, it is also important for companies’ survival that its management meets the needs and expectation of various stakeholders. A stakeholder of a company is any person or organization (client, sponsor, director, public, etc.) that is involved in the project, or whose interests may be positively or negatively affected by execution or completion of the project (Yu, et al., 2012). Therefore PPM also involves identification of projects that are most suitable for the strategic interest of various stakeholders which include shareholders, employees, government, etc. These expectations are increased when it is not a project but a set of projects that are running in the organization. The evaluation of each of the stages of projects in the portfolio must be present "voice of the customer" appropriately incorporated in the corresponding technical requirements (Beringer, Jonas, and Georg Gemünden, 2012).

2.4. Project Portfolio Management Framework

The main elements of framework for project portfolio management are: strategy, governance, processes, and methods (tools and techniques).

2.4.1. Strategy

According to PMI project portfolio management is a process, in which projects are considered to be vehicles, and project management is considered to be the disciplines which are used to bridge up the gap between organisational strategy and the fruition of the goals and objectives for which the strategy was formulated (PMI, 2006). According to Cooper et.al, (1997, p.27), there are three main goals of portfolio management, in which one is strategic alignment. Thus strategy is of significance importance in PPM. The term strategy is comprehensive and
includes goals, plan, objectives, and teams. The literature lacks a universally agreed definition of strategy. However, as a matter of fact, irrespective of the definition of strategy; the key element is that every member of a firm has a clear and shared comprehension of following elements. Competitive strategy can be defined as a combination of the goals that the firm aims to achieve and the means i.e. policies through which the firm aims to achieve the goals (Levine, 2005, p.138)

While formulating strategies project managers identify following items:

• A mission or position based on a set of services, products, markets, customers, channels, geographies, technologies (these are the goals)
• A set of quantitative measures for goals
• Principal approaches through which managers attempt to achieve goals (i.e. means)
• articulated plans that are to be implemented to use existing resources through planned means to achieve the goals

Once the leadership of the company has identified organisational mission, its goals, and organisational strategies; the next level is identification of critical details of particular projects during which the strategies are to be carried out. All these projects serves as candidates to carry out the strategy of the organisation and thus are collectively called the project portfolio of the organisation. PMI (2006, p.7) explains that there is a strong link between project portfolio planning system and organisational strategy as shown in the figure below. PMI argues that the execution of a strategy requires managers to use strategic management systems, processes, and tools so that they can define and develop high level portfolio planning, operation planning, and project portfolio management (Killen, et al., 2012).
Pennypacker and Enterprise Portfolio Management Council Staff (2011) and Gutiérrez and Magnusson, (2014) also highlighted a connection among corporate strategy, programs, portfolio, and projects (see figure 3 and 4 below). This shows the logical sequence of the corporate business strategy movement from top management level to individual level. This is also called the strategy articulated for the strategic business unit (SBU) level which in turn transforms into portfolio, projects, and programs (Arlt, 2011).
It is important to note that a project cannot be included in the portfolio simply because it aligns with strategy. The main criterion is evaluation of the impact of the project on the success
and strategy of the company (Voss and Kock, 2013). A project should be given an overall value score based on the sum of all impacts it has on organisational strategy. It is important to ascertain this critical data explicitly and be communicated to every decision maker. The most important thing in PPM is to identify and source most critical and important projects within the umbrella of the organisational strategy (Reilly and Brown, 2011).

2.5. Factors affecting Implementation of PPM

2.5.1. PPM Governance

PMI defines governance as “the act of creating and using a framework to align, organize and execute activities in a collectively coherent and intelligible manner in order to meet goals” (PMI, 2005, p.8). PPM can be considered as an effective governance method for an organisation and should be an integral component of overall governance framework. The Governance framework explains the use and limits of power, code of conduct, and work protocols within an organisation to effectively promote strategic goals and objectives as well as to realise intended advantages. Figure 5 below details all associations in an organisation that play critical roles and are interrelated (Teller and Kock, 2013).
2.5.2. PPM and Operations Management

The term Operations is used to define daily process and activities conducted by an organisation. Operation involves also includes processes that are not project-specific. Nonetheless, operational management processes are often product of executing various projects in the portfolio (PMI, 2006). Portfolio management requires consideration of both operations and project management in an organisation. On the one hand, operational side of organisation focuses on recurrent activities and operations management requires put in place effective processes that can be used to execute the strategic management and planning. On the other hand, the project side focuses on management of program/project which in turn facilitate efficient project planning and effective implementation. Following factors can be used to explain how operation management is related to portfolio management (Relich and Jakabova, 2013):
2.5.3. Finance

The financial function monitors the budgets of portfolio, compares project expenses with predicted budget figures, and also examines the realized benefits of the project. The financial function ensures appropriate and prompt adjustments are made to financial plan so that financial performance of the projects is optimised which in turn add to the overall financial performance of the company (Kerzner, 2013).

2.5.4. Marketing

The market research, analysis, and benchmarking also have a significant role in project portfolio management. The components of portfolio of an organisation are directed by various considerations such as platform development, market opportunity, regulatory obligations, support functions, and operational needs. In order to undertake effective strategic decisions input from marketing function is essential. These inputs show the direction of the company in choosing and managing projects in the portfolio (Kerzner, 2013).

2.5.5. Corporate Communication

As explained earlier, project portfolio management gives major capabilities to achieve the strategy of an organisation; therefore, corporate communication becomes extremely important in the execution of overall PPM. Plans are made at executive level which are effectively communicated downwards with detailed information regarding major objectives and projects that are to be executed to achieve them. It is important to communicate milestones or critical events reflecting progress of the company (Wysocki, 2011).
2.5.6. **Human Resource Management**

Human resource management and planning identifies required skills and qualifications to achieve success in all projects. Then a pool of resources is created for all projects to access and utilise existing resources (Kerzner, 2013).

2.6. **PPM Tools and Techniques (Methods)**

As PPM is a set of processes therefore there must be supported by a combination of tools (Levine, 2005). A project portfolio management tool has significant importance among all business tools as it is not just a project management tool as it provides business interpretation of every project management process and supplies critical information to executives and decision makers. Thus, PPM tools and techniques are critical for the development and implementation of PPM. Similarly, project portfolio management is an integration of business functions and traditional projects; therefore, there must necessarily be an integration of various project management tools and project portfolio management tools. In case of traditional project management processes the tools and techniques focus on project management, but more comprehensively, the PPM tools and practices must provide support to selection and prioritisation of projects while maintaining pipeline (Jonas, Kock, and Gemünden, 2013).

Teller (2013) opined that project portfolio management is a multifaceted and complex task. Although the judgement of high management is needed, all judgements must be supported by appropriate analyses. The most important thing to remember while selecting PPM tools is to keep in mind that the fundamental role of tools is to facilitate managers in quick decision making. These decisions must then be effective, justified, and well communicated. Lastly, managers must also keep in mind that appropriate tools are required at different stages throughout the lifetime of
a project (Kremmel, Kubalik, and Biffl, 2011). In the beginning management judgments are rather intuitive and then later, when facts started to clarify, rigorous financial analysis should be conducted (Schwalbe, 2015). Appropriateness of a tool depends upon the type of projects and respective stages in overall portfolio. Following figures shows this argument:

Figure 6: Appropriate validation methods for different types of projects (Goffin, 2005)
Figure 7: Appropriate selection tools at various stages of the innovation process (Goffin, 2005)

Usually financial tools face limitations in the starting of a project because there is insufficient reliable information. Due to inherent limitations in financial estimates organisations try to find broad approaches for PMM. Thus financial projections do exist but merely as one among a variety of factors (Biedenbach and Müller, 2012). So the main argument here is that in order to improve project selection while knowing that financial projections are based on unreliable information there must be some other criteria that have well-established correlations with probable success of projects. For example, a set of generic factors for a project of new product development may consist of growth rate and market size, number of competitors; and the impact of new product on organisational strategy (Lacerda, Ensslin, and Ensslin, 2011).

Meredith and Mantel Jr, (2011) argued that good portfolio tools have following elements:

2.6.1. Evaluation criteria

- There must be valid evaluation of project value.
• The overall portfolio of projects must optimise the allocation of resources in terms of efficiency. It is important to allocate appropriate resources to all projects as they all are competing for scarce resources (Lacerda, Ensslin, and Ensslín, 2011).

2.6.1.1. The Balanced-Portfolio Criteria
• Managers should balance high-risk projects with low-risk projects in order to ensure that overall risk exposure remains acceptable. There are also some other criteria to balance projects for example long-time projects should be balanced with short-time projects (Meredith and Mantel Jr, 2011).
• It is important that portfolio fits and accords with strategic needs of the company. It should be flexible enough that organisation may delay one project for another of strategic change requires so without compromising the impact of projects on organisational performance (Schwalbe, 2015).

2.6.1.2. Management Criteria
• There must be as open management process as possible.
• Decision must be made on the bases of valid, reliable, and unbiased information.
• If there is a need to cancel a project it must be made sure that staff remains motivated.

2.6.1.3. The Valuation Method Criteria

There are inherent strengths and weaknesses in all evaluation methods; therefore the choice of evaluation method depends upon other factors such as degree of uncertainty and freedom or autonomy of project managers to make decisions. An NPV method is suitable for
projects that are single-phased, have lower risk. But in case there are several decision points, a Monte Carlo simulation or ECV are more reliable. If there is higher level of uncertainty then Internal Rate of Return calculation is better choice (Jonas, Kock, and Gemünden, 2013). In order to minimise uncertainty typically a combination of evaluation methods is applied for evaluation (Biedenbach and Müller, 2012).

The evaluation team should be able to take appropriate actions therefore it must have divisional or corporate level employees which have power to make changes and undertaken decisions. However, some researchers have shown concerns about whether to conduct portfolio evaluations in the same manner as they are conducted for individual projects (Kremmel, Kubalík, and Bifil, 2011). Kerzner, (2013) argued that project evaluations and reviews must be carried out at time indicated by work programs and should not be limited to artificial schedule. Therefore reviews must be independent. But, it is essential to maintain good communication and therefore, managers should not give green signals to projects after its review if it is likely that it will be rejected by the portfolio process.

2.7. Success Criteria of PPM

There are ample examples of successful portfolios but there is only limited research focusing on key factors that contributed to the success of the companies. Wysocki, (2011) lately conducted a study on six companies in the computer technology industry involving multiple projects or project portfolio management. The study concluded that following three factors are commonly found in successful project portfolio management.

2.7.1. Flexibility in Structure and Effective Communication
For a multiple-project environment to operate efficiently and effectively it is essential to remove restrictive layers of bureaucracy. There should be no narrow communication channels and prevent rigidity in development processes (Relich and Jakabova, 2013). Success of portfolios management depends upon the ability of environment to encourage flexibility and offers open communication channels. The main benefit of providing flexibility to project teams is that innovative ideas emerge and consequently existing product lines may improve and improvise (Voss and Kock, 2013).

2.7.2. Low-Cost Scanning of Environment

Several companies devote significant time and other resources to hit product “home runs.” In other words, firms put all efforts and finances in one project and then try to win the market by storm. They usually lack sufficient analyses of alternates and/or future commercial risks. Successful project portfolio management is typically achieved by launching diverse low-cost projects (Teller and Kock, 2013). The concept of environmental scanning i.e. making and market-testing various prototypes of experimental product is sometimes by making strategic alliances with market actors. For successful PPM firms should not rely on narrowly concentrated efforts instead they should aim to have diversified projects. Firms should aim to develop and test pilot projects before dedicating resources into full-scale production. For instance, Rubbermaid typically launches several product ideas and offers samples into the markets to observe market response. It then uses the analysis to identify improve potential market winners and simply discard other ideas that fail to meet expected response (Arlt, 2011).

2.7.3. Time-Paced Transition
Timing is critical for successful portfolio management, particularly as organisations are under a transition from one product or service to another. Successful project portfolio management requires managers to plan PPM in a way that it is based on long lead times and they must proactively plan portfolio to ensure that transition is as smooth as possible. This principle applies both diversification of product line and in developing new products or upgrade of products (Reilly and Brown, 2011). Gillette, for instance, has been creating lucrative business opportunities by continuously developing new models of products. It has a very sophisticated product life cycle planning, that allows it to have reliable predictions of life cycle of existing products in the market and therefore it plans new products ahead so that it can launch new models when the life cycle of existing products ends. This shows that significant of timing of project portfolio. Projects portfolio should have projects that meet the long term needs of organisation (Yu, et al., 2012).

2.8. Challenges to effective Project Portfolio Management

Typically, there are some common challenges which the management faces in implementing effective PPM. Considering the literature available there are diverse factors that potentially have adverse impact on PPM practice, however, most common problem areas are summarised below:

2.8.1. Conservative Attitude of Technical Assets

For several industries, particularly technological companies, the base of operations is the technical department or the team of technical professionals such as engineers, scientists, or similar personnel, who develop prototypes of potential products. A very common challenge is
the unwillingness of this core team to diversify product line and endeavour for new projects (Killen, et al., 2012). There may be several reasons for this attitude for instance organisational inertia, or conflict between the interest of research team and other organisational functions. For example, research team develops an idea for a new product but the finance department may consider this idea too risky, too expensive, or not aligned with the organisational strategy and long term goals (Unger, et al., 2012).

This can be observed in situation where top management attempts to decrease the number of ongoing projects due to strategic reasons, but the engineers or research team is reluctant to follow their lead (Beringer, Jonas, and Georg Gemünden, 2012). Take the example of Data General Corporation, a computers and IT products manufacturer that has been observed to be dominated by its hardware engineering team. This team developed and pursued its own new product development goals without matching them with strategic interests. The team launched failed products one after another and by 1990s, it faced continued losses. Consequently it was acquired by another EMC Corporation (Lerch and Spieth, 2013).

2.8.2. Lack of Synchronisation

Previous section leads this review to emphasise the significance of alignment of projects and portfolios with strategic outlook. If a firm consecutively develops or invests in a portfolio in which projects do not synchronise with strategic focus then effectiveness of PPM is compromised. This particularly happens when there is a change in strategic focus (Voss, 2012). When strategic focus changes existing portfolio gets out of alignment as it is aligned with old strategic focus. Changes in strategic focus are typically due to changes in the external environment and firms’ reaction to adapt to changes. Firms need to change portfolio according to
the new focus and restore alignment. The importance of long term planning is emphasised by this phenomenon (Wu, et al., 2012).

2.8.3. **Risky Projects**

One of the common factors for poor PPM is that firms invest in risky projects or conduct poor-quality evaluation which shows unpromising projects as promising ones (Heising, 2012). For example, consider the latest battle between Blu-ray high definition Digital Video Disc (DVD) technology by Sony and the High Definition Digital Versatile Disc (HD-DVD) by Toshiba in consumer video electronics market. Sony was able to convince the majority of the customers that its technology was superior although it required relatively more expensive machine. Consequently, majority of the retailers and content manufacturers steadily withdrew demand for the HD-DVD technology; however, Toshiba continued this project for several years. This project was unnecessary and had a high costs. Ultimately, Toshiba abandoned this project in 2008 (Yaning, 2011).

This example highlights that managers must routinely rebalance existing portfolio, particularly when the portfolio is oriented towards product lines. By rebalancing managers must ensure the overall product line is sufficiently diverse so that it can offset the adverse impact of failed products or unnecessary or weak projects in the portfolio (Martinsuo, 2013). It is important to note that cancelling a project is not an easy decision as it implies that resources already invested are wasted and thus very careful evaluation is required to make such decisions. This argument also highlights the importance of evaluation phase of project portfolio explained earlier. Thus it is critical to avoid unpromising project in order to ensure that PPM is effective (Zhao, et al., 2012).
2.8.4. Scarcity of Resources

Resources are scarce including human resources. The cost of personnel costs is considered to be the highest cost in project management. Other resources such as financial resources, raw materials, or supplies are also critical for effective portfolio management. It is important that management conducts critical evaluation of projects before investing resources. Limited resources compromise the ability of the firm to effective PPM (Beringer, Jonas, and Kock, 2013). Effective PPM requires that adequate organisational resources are available when required by portfolio. When organisations fail to provide adequate resources when needed then the project portfolio underperform. It is important to consider requirement of all types of resources particularly financial and human resources (Turner, 2014).

2.9. Chapter Summary

The fundamental aim of project portfolio management is that it ensures that all organisational projects are in line with the long term corporate strategy. The management should ensure that there is adequate complementarity in project portfolio so that all of its project management teams are aligned with its strategic objectives instead of working in cross-purposes. Thus PPM as a visible symbol reflects the long term strategic direction of a company as well as its commercial goals. The portfolio comprises of projects that in combination send a clear message to all of the organisational functions about strategic priorities of the management, it planning to future resource allocation, and long term direction. Project portfolio management can also be considered as a complementary process to risk management of a company. This is because PPM ensures that existing and future projects are aligned with strategic objectives of the
company. PPM involves effective governance and critical evaluation of all projects in the portfolio and thus minimise risk faced by the company. PPM constantly attempts to achieve a balance among a variety of projects. It seeks a balance between the risks associated with projects and their return trade-offs. It also balances highly efficient projects with underperforming projects. The review concludes that as firms continue to adopt project management approaches and methods and techniques to achieve their long term strategic goals and objectives it is highly likely that project portfolio management i.e. organisation of projects through portfolio management, will become the next logical step.
CHAPTER THREE: RESEARCH METHODOLOGY

3.1. Introduction

The following research methodology chapter inculcates different techniques, approaches and methods that have been used by the researcher in order to obtain relevant information that would be used in order to carry out a comprehensive and detailed primary or secondary analysis. Theoretically, a research commonly contains defining, redefining and enumerating issues or problems which are ideally followed by the generation of certain key hypothesis which are resolved through the provision of apt conclusions and precise recommendations. Therefore, the underlying factor amidst all the key aspects of a research are assimilated within the research methodology chapter and hence the following chapter with the current study has shed light on various different headings, including research philosophy, data collection method, research strategy, data analysis method, research design etc.

3.2. Philosophical Paradigm

Research philosophies or the philosophical paradigm highlights the nature of information that would be utilized in a research study. Furthermore as narrated by Kumar (2010), research paradigm is an explanation of the philosophical choices that a researcher has inculcated in a study (Merriam, 2012). In addition, contemplating similar views, Bryman (2012) stated that the philosophical paradigm in a research study relates to the epistemological deliberation which highlights the key ethos and principles that have been applied to a research study in order to attain definitive knowledge and rationale.
According to Creswell (2012, p.11) there are multiple and different types of research paradigms that can be corroborated within a research study including interpretivism, post-positivism, positivism, pragmatism, constructivism, pragmatism and critical theory. While all of the mentioned philosophical theories have their own unique attributes and application, two of the most commonly and generally used research paradigms are positivism and interpretivism. According to the positivist school of thought, techniques and methods that are incorporated under the heading of natural sciences are appropriate in the context of social research and to study certain social phenomenon (Saunders, Lewis & Thornhill, 2012). In addition, within the doctrine of positivism reality and truth is finite in nature and cannot be altered based on the perception or interpretation of different observers and societal norms. Moreover, according to Yin (2013, p.17) information or knowledge obtained through and under the positivist school of thought is objective in nature and cannot be refuted by opinions or personal believes.

However, since the research variable under study was the implementation of project portfolio management and did not require any quantifiable or statistical information for data analysis, therefore the most apt epistemological supposition and paradigm was interpretivism. According to Harwell (2011, p.147) under the interpretivism theoretical school of thought reality is construed to be infinite in nature and varies from one observer to another based on their personal experiences and understanding. Using the interpretivist research paradigm allowed the researcher to add qualitative information to the existing literature on the subject matter of project portfolio management and further allowed the researcher to evaluate new academic underpinning (Matthews & Ross, 2014, p.84).
3.3. Research Approach

As opined by Maxwell (2012, p.32) there are two fundamental and widely used research approaches; namely deductive and inductive. In the words of Battaglia (2010) the deductive approach follows a top to bottom reasoning criterion, where ideally a research study begins with a more collective and general observation pertaining to the research variables and from there onwards narrows down the general assessment into certain specific assessments and hypotheses. In contrast however, inductive research approach follows and adopts the opposite reasoning framework to that of the deductive research approach.

As mentioned by Myers, Well and Lorch (2010, p.127) inductive approach implies and follows a bottom to up approach where the research study begins by making specific observations and draws upon other informational and data collection sources to broaden the horizon of the research study. As narrated by Flick (2015, p.67) the core difference between the two approaches is hidden in the fact that deductive approach is used to test a theory or derived supposition of the research study, whereas the inductive approach is typically used to develop new theories and expand upon the existing literature referred in a research study.

Therefore, in light of the following assessment, the respective study set forth to study and analyse project portfolio management implementation process with respect to Japanese car manufacturers in Europe. Since the following research study adopted a general to specific format therefore the underlying research approach within the following dissertation was inductive. Using the inductive research approach allowed the researcher to add new academic dimensions to the existing literature gathered on the subject of project portfolio management.
3.4. Research Design

For the validity and effectiveness of any given research study, it is essential to define the design of that particular study beforehand. According to Aliyu et al. (2014, p.79) there are three variants of research designs; Qualitative, Quantitative and Mixed Method research design. As opined by McGregor and Murnane (2010, p.421) a quantitative research design is primarily used to collect statistical and factual data, data which cannot be refuted and altered depending upon the observation of the interpreter or the researcher. In addition, the use of a quantitative research design can allow the researcher to carry out a research study over a larger pool of respondents and in the process increase the scope and generalizability of the research study (Suri, 2011, p.65). As documented by Creswell (2012) a higher generalizability ratio allows an incremental number of users and viewers, from a dispersed geographic region and demographic to benefit from the results of the study.

In contrast, however, the qualitative research design is used when the researcher intends to obtain subjective data, information that has been derived from the personal experiences of the respondents and further analysed and comprehended based on the rationale of the researcher (Maxwell, 2012, p.32). Moreover, according to an observation provided by Creswell (2012, p.11), using qualitative data or research design can allow the researcher to obtain in-depth analysis and information that can provide rationale to intangible factors, which are difficult to quantify.

With respect to the following research study, the researcher has adopted the use of qualitative research design since the researcher had implemented the interpretivist research paradigm. Moreover, the variables within the following research study do not require quantitative data and can analysed only through the experience of the managers who have
utilized the concept of project management. And since the topic is dynamic in nature therefore quantitative information would be suitable for the latter stage of data analysis.

3.5. **Research Strategy**

According to Mackey and Gass (2015) the theoretical definition of a research strategy is the framework or rubric that a researcher follows in order to go about to generate and obtain the adequate amount of informational data, data which would be interpreted, inferred and analysed with respect to the research topic. Furthermore, according to Yin (2013, p.17) there are different and unique research strategies that a researcher can use, including case studies, surveys, action research and content analysis etc. Even though all the research strategies have their innate usage and benefits, one of the most widely used research strategy is Survey research Harwell (2011, p.147). Similarly, the researcher has utilized the interview survey research strategy within the following study.

As narrated by Yin (2013, p.17), using surveys as a research strategy can allow the researcher to effectively manage time and resources and in addition surveys are also considered to be a cost effective process of obtaining primary information. In addition, surveys are also a reliable method to gather information that is diverse in nature and enables the researcher to gather information that sheds light on different theoretical paradigm of the research topic under study.

3.6. **Data Collection Method**

Ideally, there are two types of data collection methods, primary and secondary and both methods are widely used and critically acclaimed by different theoretical school of thoughts and
scholars (Flick, 2015, p.67). In the words of Bryman (2012) primary data collection method allows the researcher to obtain new information, information which has not been previously recorded or compiled by any other source. Therefore, by undertaking primary data collection method researcher can add new theoretical dimensions to the existing literature available on the research topic. Generally primary data collection method utilizes sources such as interviews and questionnaire surveys, where a pool of respondents are selected and they provide the researcher with their views, opinions and factual experiences. In contrast, Saunders, Lewis and Thornhill (2012) contemplated that secondary data collection method is where the researcher uses existing data which has been assimilated and compiled by other researchers and is does not add any new theoretical underpinning to the pre-existing literature data available on the research topic under study.

The data collection method used within the following research study is both primary research and secondary research. The primary research has been conducted through the interviews of different project managers of the automobile industry in Europe. Whereas the secondary data was collected from the selected company’s financial statements, research journals, research reports, articles, newspapers and different bulletins concerning the automobile industry of the Europe. By using both the primary and secondary data collection method the researcher was able to triangulate previous research studies with the primary information that was obtained, increasing the effectiveness and validity of the research study. In addition, by using the secondary sources the researcher was able to increase the validity of the research as it peer reviewed and authentic information was incorporated in the study.

3.7. Research Instrument
For the following research study the researcher has used interviews as a research instrument and devised an interview with semi-structured questions. According to Creswell (2012, p.11) interviews are a key source to gather in-depth and detail information that is qualitative in nature and augments upon the personal experiments of the interviewees.

### 3.8. Sampling Method

The purpose of sampling in any research process is the collection and selection of appropriate target population in order to jot down the process of data collection. Sampling methods are generally categorized into probability and non-probability sampling (Kumar, 2010). Probability sampling indicates an equal distribution of sample population resulting in equal chances of selection of individual samples hence, also termed as random sampling. It is preferred in situation where extensive amount of population data is available to the researcher (Gray, 2014). On the other hand, non-probability sampling depicts an unequal population distribution resulting in uncertainty in determining the probability of sample population selection. This type of sampling is employed when only a limited amount of information is available to the researcher for the purpose of research studies (Bhattacherjee, 2012).

Therefore, based on the following assessment the researcher has used the non-probability sampling method, as the population size of the following study cannot be accurately determined. Using the non-probability sampling method allowed the researcher to gather the desired number of respondents in a short period of time, which allowed the researcher to spend more time on the data analysis section of the following research study. However, one of the main drawbacks of this kind of sampling method includes biasness and the results obtained may be less objective than those of probability sampling (Kumar, 2010).
3.9. **Sampling Technique and Size**

There are various types of techniques within probability and non-probability sampling. Some of the techniques include quota sampling, purposive sampling, snowball sampling, stratified sampling, convenience sampling and cluster sampling (Bhattacherjee, 2012). Suri (2011) indicates that snowball sampling can be regarded as the search and attainment of information through a series of informed recommendations whereas convenience sampling is based upon the easy accessibility and time affectivity of the research process. For the following research study the researcher utilized the snowball sampling technique where the researcher was able to gather all the respondents through informed recommendations. In addition, the present study has a sample size of 10 interviewees who were associated with the process of project portfolio management in the chosen case studies of Toyota, Suzuki and Honda. All the case studies were upon the criterion that they have manufacturing base in the European region and have been or are currently utilizing the concept of project portfolio management.

3.10. **Data Analysis Plan**

Data analysis consists of schematic evaluation, organization and interpretation of the acquired data for the purpose of establishing conclusions. According to Peersman (2014), there can be multiple data analysis techniques among which SPSS for quantitative and Thematic Analysis for qualitative analyses is the most common data analysis plan. For the following research study the researcher has utilized the thematic data analysis plan where raw information from the interview analysis was bifurcated into relevant themes and each theme was analyse in contention with secondary information that was obtained and incorporated in the literature review chapter.
3.11. Accessibility Issues and Ethical Considerations

The accessibility issues in the present study were encountered in approaching and identifying the various research participants among the huge population crowd. Moreover, a lot of participants were unwilling to participate in the research and it took considerable effort and time to get the required number of respondents as managers were reluctant to be interviewed. On the other hand, the main obstacle faced during secondary data collection was that a large number of research publications were inaccessible or offered only a limited access without paid subscription. Ethically, informed consent was taken from all the research participants and they were given a free hand to leave the research at any time as per their will. Moreover, no personal information of any respondents was disclosed to any other person and the participants were ensured that all their information was taken just for the purpose of research study and will be discarded afterwards. The confidentiality and anonymity of the participants was ensured and appropriate conditions were negated clearly and precisely to them. In addition, the researcher was vigilant toward the aspect of plagiarism and all secondary information used within the research study was cited and appropriately referenced and no form of ethical misconduct was observed during the formation and compilation of the current research study.

3.12. Research Limitations

The essential constraints, barriers and hindrances faced by the researcher in the overall research process can be termed as the research limitations. These factors may contribute to significant influence on the validity and authenticity of a research. The present study is limited by the number of respondents, confounding variables and human error. Moreover, time and budget constraints also serve as a basic limitation. The study is confined to only a limited
number of correspondents i.e. 10 correspondents from and the results are interpreted and drawn in turn from only a limited amount of data gathered from these participants. It may serve as an eminent research limitation and furthermore; the participants were selected through non-probability snowball sampling indicating an unequal population distribution and less generalized results. Another research limitation was the research design as future researcher can use the quantitative research design and increase the number of the sample size and in the process also increase the element of generalizability associated with the research study.
CHAPTER 4: RESULTS AND DISCUSSION

4.1 Introduction

This chapter presents the results of primary research conducted in this study. As explained in previous chapter that the primary research is based on semi-structured interviews and data analysed technique used to analyse qualitative data collected in this study is thematic analysis. The chapter presents the results within the context of aims and objectives and uses themes to present interview findings. The results section is followed by a discussion section in which results are analysed in broader literature and how they achieve aims and objectives.

4.2 Thematic Analysis

4.2.1 Relationship between PPM and Corporate Strategy

All of the participants agreed that the fundamental aim of PPM is to align it with corporate strategy. One of the participants opined that corporate strategy defines what and how the company is aiming to achieve. In other words, it defines allocation of resources. There are several projects that, in aggregate, help to achieve the corporate strategy and organisational aims and objectives. If portfolio lacks projects that do not synchronise with the organisational aims and objectives then resources allocated in those projects do not add value to the company. Thus aligning portfolio projects with the corporate strategy is a must. Another participant stressed that corporate strategy is a plan to direct resources and operations to add maximum value to the organisation. Maximum value is achieved by improving the efficiency of allocation of resources and by investing resources into most profitable projects. Thus project portfolio should not aim to identify most profitable projects that add maximum value to the wealth of the shareholders, but
on the other hand, it must also maximise the efficiency of scarce resources to minimise costs. Thus aims and objectives of project portfolio management must be consistent with corporate strategy.

4.2.2 Factors affecting Implementation of PPM

Interview results show that there are a variety of factors identified by participants that affect implementation process of an effective project portfolio management. The most common factor identified by interviewees is having a clear and unambiguous corporate strategy. One of the participants opined that it is important to evaluate the profitability of each project in the portfolio however, it is equally important to ensure that it matches the organisational strategy. Managers must understand the importance of each project they propose and evaluate and how it helps in achieving corporate aims and objectives.

Another factor identified by participants is corporate governance. One of the participants said that governance mechanisms ensure that objective and transparent project evaluation are conducted. It prevents delinquent behaviour and prevents managers to pursue risky projects that are beyond organisation’s risks tolerance. It makes people accountable for their decisions. Thus governance has significant implications for effective project portfolio.

Another common factor identified by participants is the financial management. Financial management is involved at all stages of any project from investment appraisal to implementation and to performance evaluation. Thus effective financial management is a key to effective portfolio management. One of the participants opined that in his experience most of the project failed due to ineffective financial management. Often investment appraisal and planning phases are good but during the execution of project, managers lose control and thus at the end the
project either exceeds initial budget or exceeds time allocated. Finally the performance of project is compromised. The effectiveness of overall portfolio depends upon performance of individual projects and thus it is extremely important to keep effective financial management to ensure success of portfolio of the organisation.

Another important factors identified by the participants are the project managers i.e. human resource. The effectiveness and performance of a project heavily depends upon the skills and competences of project managers. One of participants opined that although corporate strategy and project portfolio are designed by higher management, project managers are responsible to execute the individual projects. If projects managers fail to manage project effectively and successfully, then the performance of overall portfolio cannot be maximised. Thus the human resource i.e. project managers, their skills and competences, also have significant influence overall the effectiveness of portfolio.

Another participant made an interesting comment that not only human resources matter but how they are being managed is also significant importance. The participant was of the opinion that human resource management and policies have significant influence on the productivity and performance of employees including the project managers. It is important to ensure that there is an effective human resource policy that develops and maintain highly motivated workforce and middle management. The participant also mentioned that performance evaluation, rewards and incentives are very important in motivation of project managers. It is extremely important to reward high performing individual. Furthermore, training and development policies also affect the performance of human resource.

This study also found that another commonly cited influencing factor are the tools and techniques used by project portfolio team. One of the participants opined that there are various
softwares such as SAP which are helpful in designing and implementing project portfolio. The effectiveness of tools and techniques used in portfolio management are critical to identifying the best projects and aligning them with the corporate strategy.

4.2.3 Key success criteria for the Project Portfolio Management

The study also asked participants to identify success criteria for portfolio management. The most cited factor was found to be ability of organisation and portfolio to adapt to changes pertaining to external environment. One of the participants opined that there are always risks and uncertainties in all types of projects and things never go as they are planned or as managers expect them to be. Thus the ability of the managers to proactively identify changes and adapt to those changes is critical in overall success of project. Another participant opined that the overall portfolio should have sufficient flexibility to face unseen risks. Contingency planning is a part and parcel of project management. The participant stressed that project management tools and techniques and the project managers must have ability to change according to changes in internal and external environment. It is important to have flexible portfolio structure to absorb shocks.

One of the participants opined that diversity is critical to successful design and implementation of project portfolio. Typically there are different projects in a portfolio and each one of them has its own risks, costs and benefits. The portfolio must be balanced; for example projects with high risks and high benefits should be balanced with projects with low risks and low benefits. This diversity also facilitates implementation of portfolio and therefore is considered to be a success criterion.

4.2.4 Implementation of PPM in Japan within European Demographics
The study also asked participants to opine whether PPM with successful track record in Japan can be implemented in European automobile industry and can be expected to produce similar success. The study found that majority of the participants rejected the idea that Japanese management can be replicated in European scenario. One of the participants opined that there are several reasons due to which PPM in Europe should be different than PPM in Japan. For example effective PPM depends upon human resource management and Europe and Japan have different HRM practices. Furthermore, the risks perception and work practise are different. One of the participants opined that due to differences in culture the organisational goals and objectives and the organisational strategy may be different for an automobile firm in Europe as compared to its counterpart in Japan. Thus for PPM to be effective it has to be aligned with organisational strategy, therefore PPM should be different.

Another participant stated that Japan has a different corporate culture, governance mechanisms, work ethics, accountability systems, etc. Due to differences in these aspects it is very much possible that a Japanese manager may approach a project in a different way as compared to an European manager. It is possible that a Japanese firm may choose different portfolio from same available projects as compared to a European management due to differences in risks perceptions. Thus PPM should also be different.

However, it is important to note that all of the participants agreed that the underlying notion of project portfolio management, its principles, aims and objectives remain the same from both Japanese and European perspectives. The purpose is to align portfolio with organisational strategy, have a balanced portfolio, and to maximise value FOR the organisation including the optimization of resource allocation.
4.3 Discussion

This section discusses how results and findings of this study achieve the aims and objectives of this study. The first aim of the study was to study the relationship between corporate strategy and Project Portfolio management. This study found that corporate strategy has a significant relationship with project portfolio management. Both secondary research (see section 2.3 and 2.4) and primary research (see section 4.2) conducted in this study indicated that project portfolio management must ensure that the portfolio should be aligned with organisational strategy (Levine, 2007, p.138). If portfolio has projects that do not produce results within the context of organisational mission and vision; then portfolio does not add maximum value to the organisation. Thus for a project portfolio to be effective it is critical that it is aligned with organisational strategy.

The second objective of this study was to identify the factors that facilitate the successful implementation of Project Portfolio Management in the automobile industry. This study found that there is variety of factors that affect the implementation of project portfolio. According to the secondary research (see section 2.5) typically PPM is affected by governance mechanisms (Teller and Kock, 2013), operation management (Relich and Jakabova, 2013), financial management (Kerzner, 2013), marketing (Kerzner, 2013), corporate communication (Jonas, Kock, and Gemünden, 2013), and human resources management (Teller, 2013). The primary research is found to be reasonably consistent with secondary research. The primary research also found numerous factors that affect the implementation of PPM (see section 4.3). According to the primary research, main factors that affect implementation of PPM are clear and unambiguous corporate strategy, corporate governance, financial management, quality of human resource, human resources management, and PPM tools and techniques applied in a company.
The third aim of this study was to examine the key success criteria for the Project Portfolio Management in the automobile industry. The secondary research shows that key success criteria of PPM (see section 2.7) are flexibility in structure (Voss and Kock, 2013), effective communication, cost of environmental scanning (Arlt, 2011), and time paced transition (Yu, et al., 2012). The primary research shows that major success criteria for successful PPM (see section 4.4) are the ability of organisation and portfolio to adapt to changes in external environment, flexibility in project management tools and techniques and project managers, and diversity in portfolio. This study opines that there is also reasonable consistency between primary and secondary research results as the overall gist of both primary and secondary research are same, although, different terms are used for similar ideas. For example flexibility and diversity are common in both secondary and primary research results.

The fourth aim of the study was to study whether the Project Portfolio Management (PPM) from the Japanese car can manufacturer altered in the way to be effective in the European demographic. The study could not found any existing literature that focuses on the same topic. The primary results however, show that Japanese PPM cannot be implemented in European demographics (see section 4.5). The results show that there is a difference in culture between Japan and Europe due to which various organizational functions are different also. The study found that due various influencing factors identified above have significant differences and therefore, it may not be reasonable to expect that Japanese PPM can be as successful and effective in Europe as it is in Japan.

4.4 Chapter Summary
The results and discussion above show that there is high level of consistency between primary research results and existing literature available on the topic project portfolio management. The study showed that there is a corporate strategy has a significant relationship with project portfolio management. Portfolio should be aligned with organisational strategy. Thus for a project portfolio to be effective it is critical that it is aligned with organisational strategy. There are a variety of factors that affect the effective implementation of PPM. Although the secondary research provided more comprehensive list of such factors yet primary research has also identified similar factors that affect effective implementation of PPM. The chapter also shows that key success criteria of PPM is the flexibility or the ability of the portfolio, project managers, and the organisation as a whole to adapt to changes in external environment. The results show that there is a difference in culture between Japan and Europe due to which various organizational functions are different also. The study found that due various influencing factors identified above have significant differences and therefore, it may not be reasonable to expect that Japanese PPM can be as successful and effective in Europe as it is in Japan.
CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

5.1. Introduction

This chapter presents the conclusions drawn in this study followed by recommendations. This chapter also presents limitations in of this study along with future research implications.

5.2. Conclusion

The results and findings as well as discussion presented in previous chapter leads to a important conclusions of the research. Firstly this study infers that project portfolio management is one of the critical aspects of modern business management. The critical importance can be credited to its fundamental purpose i.e. to identify and select a portfolio of projects that best meets the organisational strategy in order to achieve organisational aims and objectives. It is important to note that organisational aims and objectives are derived from organisational mission and vision and thus PPM also has indirect influence on the success of a firm to deliver its mission and vision. PPM helps organisations to maximise business performance by aligning projects with its strategy.

Furthermore, this study concludes that the most important aspect in PPM is the factors that have significant influence on its implementation. This study concludes that there are various factors that affect the implementation of PPM. In order for PPM to be effective firms must consider these factors and address these factors in a way that implementation is smooth and serve its purpose. The most important factors identified in this study are governance mechanisms, operation management, financial management, marketing, corporate communication, and human resources management.
In addition, this study also concludes that for organisations to succeed in PPM they must develop and maintain adequate flexibility within the structure of the organisation and its portfolio so that they can adapt to changes in external environment. Organisations must also maintain sufficient flexibility in project management tools and techniques as well as project managers to meet unseen challenges. Another key success criterion of a portfolio is diversity. This implies that change management is an important issue as ability to adapt to changes in external environment and flexibility in organisational structure and portfolio indicates that there should be effective change management process and policies in place.

One of the key factors that affect all aspects of PPM is the human resources and human resource management practices in the organisation. Although an organisation may choose best project portfolio and apply best project management methodologies to execute all projects included in the portfolio; however, if people who execute the projects lack competence or motivation then it is highly likely that effectiveness of PPM is compromised. This study thus infers that human resource management is a key factor to successful PPM.

Finally this study concludes that PPM practise in Japan cannot be applied successfully in European demographics. This study found that due to cultural differences a number of influencing factors of PPM also differ. Due to these differences PPM in Europe should be tailored within the context of European culture. For example the HRM practices which is critical to successful implementation of PPM should be practised within the context of European demographics instead of adopting Japanese PPM.
5.3. Recommendations

Based on the conclusions above this study recommends that an organisation must have a clear vision and strategy. For this firms should assign competent human resources to create flexible portfolio. For effective decision making and to identify most suitable projects, firms must have reliable and coherent data gathering procedures. For example while conducting appraisals financial data and tools must be highly reliable and justifiable. This study also recommends that there must be adequate prioritisation guideline and relevant procedures to rank projects in the portfolio which would help in balancing the overall portfolio (Kodukula, 2012). There must be a well-defined model and a dedicated and competent team that is responsible to follow guideline and procedures using the model effectively and consistently (Levine, 2007).

Since governance has been identified as a critical factor in effective implementation, therefore this study recommends that project performance evaluation should not left in the hands of project managers. Instead there should regular audits and reviews conducted about performance of projects and PPM team. Internal audits are most suitable governance mechanisms for organisation. Internal audit system appraises performance and holds decision makers accountable for improving or deteriorating performance (Tricker, B. (2015). Thus for PPM to be successful this study recommends that firms keep effective internal control and audit systems and ensure high level of corporate governance.

Within the context of governance this study recommends that a three level organisation hierarchy is most suitable as it ensures high level of coordination among different levels of management. This is because there is a superordinate, typically members of the corporate level management (or the upper level hierarchy) who govern the division level management (or mid-level hierarchy). Finally there are subordinates i.e. business line level (or the lowest level
hierarchy). This structure ensures high level of governance regarding decision-making processes. Inter-level communication must be optimised so that information exchange and coordination is efficient and effective (Council, 2012).

It is clear from the conclusions above that project planning focuses on the operational side and thus is related to time, budget, and efficiency of projects. However, project portfolio management tools should be focused in continuous strategic assessment and optimisation (Turner, 2014a). Thus management must use those tools and methodologies through which firm can:

- ensure alignment between projects and business strategy;
- ensure effective selection and prioritization of projects in portfolio;
- Achieve and maintain balanced portfolio;
- undertake decisions based on evaluation of resources and demand;
- The performance of PPM must be monitored; and
- ensure that there is sufficient flexibility to adapt to changes;

Finally this study reiterates and stress upon effective financial management. Financial management affects all aspects of PPM and thus firms must have adequate competent personnel that can ensure effective financial management throughout the life cycle of projects selected in the portfolio. Financial competences are also essential in appraising, executing, and performance evaluation of all projects in the portfolio (Lacerda, Ensslin, and Ensslin, 2011).
5.4. Research Limitations

Every research has a number of limitations and this study is not an exception. The major limitation in this study is in the methodology of this study. The methodology is based on qualitative evidence and lacks quantitative evidence. The overall reliability and validity of the results could have been improved by triangulation of quantitative data with the qualitative evidence. Furthermore, the sample size of interviewees was also relatively small because of the time and budget constraints in this study. A bigger sample size provides more reliability and validity. Furthermore, there are also limitations in the focus of this study, which focuses on the automobile industry and thus recruited participants from the automobile industry only. Therefore, the conclusions drawn in this research are based on the perceptions and opinions of automobile industry managers.

5.5. Future Research Opportunities

The limitations explained in the previous section present the most important future research opportunities. Firstly, future researchers may conduct quantitative and mixed research to provide more reliable evidence and validate the results and findings of this study. Furthermore, future researchers could conduct research with a bigger sample size. Furthermore, future researchers could conduct case studies to study PPM in the automobile industry and identify gaps and improvement opportunities in existing PPM methodologies and practices in the European automobile industry. Furthermore, future researchers could also focus on identifying differences between PPM in the European automobile industry and PPM Japanese automobile companies.

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Appendices

Interview Questions

1. How do you feel that the concept of Project Portfolio Management has evolved over time and is it now a fundamental necessity for project managers and organizations?

2. What are some of the benefits of Project Portfolio Management that your organization has experienced?

3. In terms of implementation, is the process of project portfolio management easy to use?

4. How successful has your organization been in implementing project portfolio management and as a manager what are some of the key aspects towards the successful implementation of project portfolio management?

5. What are some of the difficulties that managers and organizations face when implementing and using project portfolio management?

6. In terms of inappropriate use of the project portfolio management process, what are some of the drawbacks that an organization might have to face?

7. How successful has the project portfolio management process been for your organization specifically in the European region?

8. What are some of the recommendations that you would put forth in order to increase the effectiveness and implementation of project portfolio management?