Project strategy

Best practices for effective implementation of project strategy

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S.P. MUKKALA

DELFT UNIVERSITY OF TECHNOLOGY

MASTER OF SCIENCE THESIS

CONSTRUCTION MANAGEMENT AND ENGINEERING

Best practices for effective implementation of project strategy

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S.P. Mukkala
Delft, August 2018

EXECUTIVE SUMMARY

This graduation research is carried out to investigate the problem of effective implementation of project strategy. The problem description is the following: *Companies executing EPC projects in energy and chemicals industry encounter bottlenecks in effectively implementing project strategy*. Based on this a research question is formulated:

How can best practices related to strategy improve project strategy implementation in an EPC company?

The main research objective is *to explore the best practices to improve project strategy implementation within EPC projects*.

This research is divided into three phases. In the first phase, literature review is conducted to a) gain insight and understanding into the practices of implementation of project strategy, b) to understand the impact of the main aspects on project strategy and its implementation and c) provide a guideline for protocols for interviews in the second phase. The following ten aspects as influential in implementation of project strategy have been determined: communication, tools & methods, resources, recognition, benefits, structure, culture, leadership, decisions and actions.

In the second phase, 7 project managers and project directors of Fluor Corporation, all subject-matter experts in project execution in the EPC industry, were interviewed. The interviews have been performed to understand the practice of implementing project strategy in an EPC project, resulting in the following list of main issues with implementation of project strategy; global office communication, shared understanding, strategy-operation alignment, and bottom-up ownership.

In the ultimate phase (third) suitable best practices (tools and techniques) were selected to counter the main 4 issues based on an extensive literature study. These are as follows: planned communication, scrum, gamification, dialogue-mapping, balanced scorecard, informal leadership, and client-centric team development.

Table of Contents

LIST OF TABLES

LIST OF FIGURES

Introduction

1 INTRODUCTION

As mentioned in the title of this research, this research will focus on the best practices for project strategy implementation. Section 1.1 starts with an explanation of the context of the research subject, namely the need for focus on project strategy in complex EPC projects. Section 1.2 describes the relevance of exploration of best practices for project strategy implementation; this section details the scientific and social relevance. This research is commissioned by FLUOR B.V., general information about this company is provided in section 1.3. In the last section of this chapter (section 1.4), problem statement is described.

1.1 The need for focus on implementation of project strategy: setting the context

Project strategy is the definition of position, the means, and the guidelines of what to do and how to do it, to achieve the highest competitive advantage and the best value from the project (Shenhar et al., 2005). Many companies and project managers use implicit strategic thinking, making it an explicit part of the project management is the real challenge and the need of the hour. Project strategy helps to make project management a competitive weapon for organization in today's fierce global competition (Shenhar et al., 2005).

Shenhar et al. (2005) and Artto, Kujala, Dietrich, & Martinsuo (2008) are the only widely accepted sources that defined project strategy, classified it and focused on how to formulate it successfully. And it was based on general literature on strategy and strategy formulation which even dates back to evolution of the word 'strategy' in military activities. This graduation thesis has adopted a similar line of research. This research on project strategy implementation is developed around the abundant general literature on strategy implementation.

Strategy implementation has attracted much less attention than strategy formulation. Alexander (1991) suggests several reasons for this: strategy implementation is less glamourous than strategy formulation, people overlook it because of a belief that anyone can do it, people are not exactly sure what it includes and where it begins. It is synchronous with the present research condition of project strategy implementation.

It is vital for project success to understand the importance of excellence in execution of project strategies. A brilliant strategy can put a project team on the competitive map, but only solid execution can keep the project team and its parent organisation there (Neilson, Martin, & Powers, 2008). Empirical studies have concluded that without implementation, even the most superior strategy is useless.

This research on project strategy implementation aims to reduce the gap between strategy and performance. The task of transforming strategies into action is complex and difficult (Aaltonen & Ikävalko, 2002). Therefore, this research aims to include other phases of strategy that have an incredible influence on effectiveness of project strategy implementation. The objective is ultimate project success.

1.2 The relevance of exploration of best practices for implementation of project strategy

Only few studies have focused on project strategy and their impact on success to organisations and projects (Artto et al., 2008; Patanakul & Shenhar, 2012; Shenhar et al., 2005). Investigating project strategy implementation and exploring best practices for its effectiveness can contribute towards this research. The scientific relevance of this study is to compile various works on best practices to achieve effective strategy implementation. It is an attempt to create a holistic view towards good strategy implementation. It could be achieved by considering best practices belonging to various phases of the strategy ranging from formulation to execution.

Kerzner (2010) suggests that capturing best practices in project management is very essential for sustainable continuous improvement of the firm and for competitive advantage. According to Kerzner (2010), there appears to be four primary reasons for capturing best practices: improve efficiency, improve effectiveness, standardization, consistency. And these factors form the social relevance of the exploration of best practices.

This graduation research aims to nurture the knowledge regarding project strategy and its effective implementation. In addition, the research also aims to create a better understanding of best practices for effective project strategy implementation. The results are important and useful for managers especially during strategy development and implementation phase and researchers in the field of project strategies.

1.3 Fluor B.V.

This research is facilitated and supported by Fluor B.V., which is a multinational engineering and construction firm. It provides versatile services in the areas such as oil & gas, industrial, government and power. The projects that are executed can be characterised as large, complex, multi-disciplinary and multi-cultural and multi-office. To move one step towards better efficiency, Fluor B.V., in collaboration with TU Delft, decided to pursue a research to formulate the best practice on project strategy roll-out and effective implementation. The aim is to supplement the current methodology with best practices and methods that would have positive impact on performance and, could be effectively implemented in Fluor's context.

1.4 Problem statement

Project management is the application of knowledge, skills, tools, and techniques to project activities to meet the project requirements (PMI, 2008). But it is the project strategy that drives the project management towards excellence. Through discussions at Fluor B.V., it is understood that bottleneck is the implementation of project strategy in a diverse and complex project environment. Most studies acknowledge the implementation has become the most significant challenge with only 30% of formulated strategies being implemented in project organisations (Chege, Wachira, & Mwenda, 2015). Fluor managers seek to enhance the current project management by adopting best practices related to project strategy implementation. Thereby creating competitive advantage and improving project performance.

EPC companies are still structured according to the traditional form of organisation. A traditional form is characterised by a clear chain of command and existence of rules, procedures

and different levels of management. Such organisations often tend to be bureaucratic, less flexible and slowly responding to change (Nicholas & Steyn, 2016). Turning strategies into reality requires constant investment in management resources. It is particularly difficult in large or more complex organisations, where distance between those who formulate strategy and those who carry it out can be significant (Pennypacker & Ritchie, 2005). This interpretation of traditional and complex organisation strongly challenges the process of effective implementation of project strategy initiatives in these stringent project conditions.

Research design

2 RESEARCH DESIGN

This chapter describes the research design for this graduation thesis report. To start with, the research objective is stated in section 2.1, followed by research question, sub-questions and their coherence in section 2.2. Further in section 2.3, the scope is established and clarified to clearly define the research. The research strategy is described in section 2.4; additionally, in this section the structure of research is illustrated and a holistic view on research approach is described. The chapter concludes with a reading guide for this report in section 2.5

2.1 Research Objective

As described in the introduction, in wider context this research could contribute to the concept of project strategy implementation in project management. Furthermore, this research provides recommendations to Fluor B.V. for improvement of practices related to implementation of project strategy.

> *Research objective: Explore the best practices which improves project strategy implementation; within EPC projects.*

This study provides empirical data on actual situation of project strategy within EPC projects. Data is obtained through exploring the individuals' holistic view on project strategy and its implementation. Focus is especially in exploring the best practices in project management which could positively influence project strategy implementation.

2.2 Research Question

Analysis of the context, description of research topic, definition of the problem statement and establishment of research objective led to main research question:

> **Research question***: How can the best practices related to strategy, improve implementation of project strategy in an EPC company?*

The following sub-questions were identified to contribute to answering the main research-question.

> **Sub-question 1***: How is project strategy implementation described in literature?*

> **Sub-question 2***: What are the factors that influence the effectiveness of project strategy implementation?*

> **Sub-question 3***: What are the best practices for effective project strategy implementation?*

> **Sub-question 4***: How is project strategy implementation practiced in an EPC company?*

> **Sub-question 5***: What are the suitable best practices to achieve effective project strategy implementation in an EPC company?*

In order to answer the main research question, it is important to understand project strategy. Hence, the sub-question focuses on description of project strategy and its implementation in literature. Next to this, it is imperative to recognize the different factors influencing effectiveness of project strategy implementation and also, explore the best practices for effective project strategy implementation. The second and third sub-questions are framed accordingly.

Now general knowledge regarding the following concepts is established and acquired: project strategy implementation, factors influencing its effectiveness, and best practices for project strategy implementation. The next step is to grasp the current practice of project strategy implementation within Fluor. This is to understand the project strategy implementation practices within Fluor. The fourth sub-research question is formulated in the same manner.

Finally, a study is done so as to comprehend how the factors influencing the effectiveness of project strategy implementation are prevalent in the context of Fluor. The bottlenecks to effective project strategy implementation will be recognized and an answer will be proposed to tackle these bottlenecks. Henceforth, the fifth sub-question is developed for the same purpose.

Conclusively, answering the five sub-research questions in accordance to their order will enable in providing an answer to the main research question.

2.3 Scope

A scope is required to define the boundary limits of the research project; to define what is included and excluded in the research. The research emphasises on strategy developed at the project organisation level. Nevertheless, role of project strategy on the tactical and operational levels are also included. Also, the best practices from all the industries with significant learnings regarding project strategy are considered. But priority is to focus on EPC type of projects.

2.4 Research strategy

This section provides a detailed overview of the research strategy. The research approach is undertaken to answer the research sub-questions and subsequently, the main research question. This research comprises of three phases. These three phases are sequentially formulated to address the research sub-questions described in section 2.2. A schematic representation of the research approach for answering the main research question is shown in figure 1.

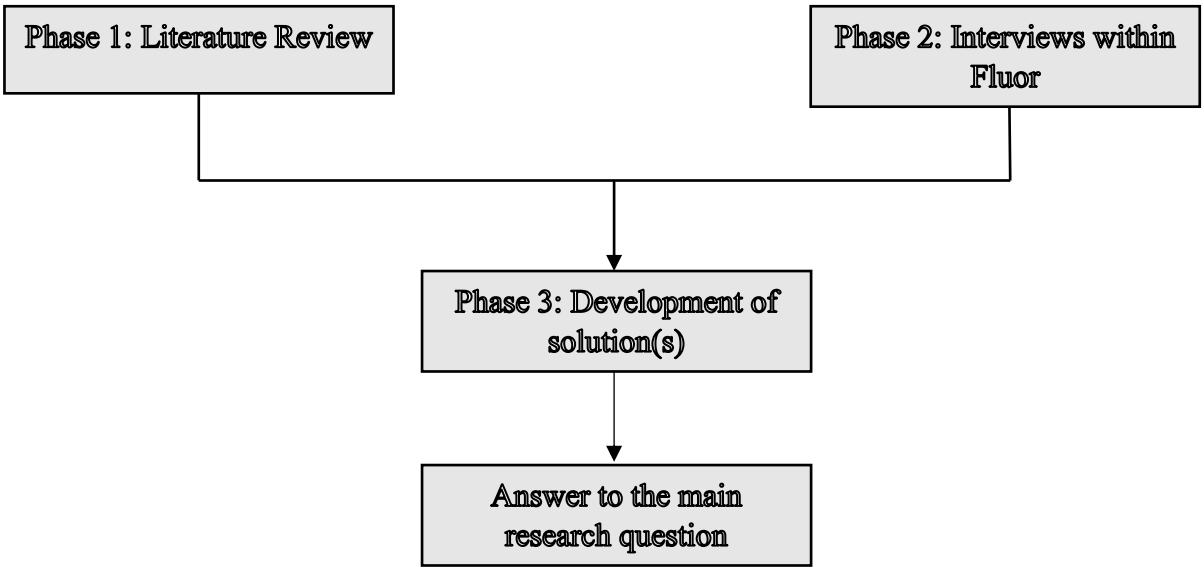


Figure 1 Schematic representation of research approach

Section 2.4.1 demonstrates the research to be accomplished to fulfil Phase 1 of this graduation thesis. In this phase, literature review is conducted. Section 2.4.2 provides the description of Phase 2. Interviews are conducted within Fluor in this phase of research. The procedure to be exercised for interviewing and the subsequent data analysis is described. Further to this, Phase 3 of the research commences. In this phase, a connection to the analysis is established. The process adopted to develop the solution is set out in section 2.4.3. In Phase 3, solution is developed based on the findings from Phase 1 and Phase 2. Finally, section 2.4.4 would provide an overview of how the concluding remarks look like.

2.4.1 Phase 1: Literature review on project strategy and its implementation

A literature review is conducted on project strategy and its implementation, factors influencing the implementation of project strategy, and best practices for effective implementation of project strategy. Through this phase, the first, second and the third research sub-questions are answered. The purpose of the literature study is as follows:

(a) First, literature review is conducted to provide guideline for interview protocol (Phase 2). The literature review provides an insight and understanding into the practices of implementation of project strategy. This comprises of study of concept of project strategy and its implementation, and the advantages of effective implementation of project strategy. The study involves listing down the aspects influencing project strategy implementation as identified in literature and elaborate them.

(b) Second, literature review is also conducted to understand the impact of certain aspects on project strategy and its implementation. A study on best practices in project strategy implementation under each aspect category is performed. It is done in order recommend suitable best practices based on the results of interviews (Phase 2) and furthermore, to provide a foundation for investigative study on relevant tools and techniques for development of solution (Phase 3).

2.4.2 Phase 2: Interviews within Fluor

In the second phase, interviews within Fluor are conducted to answer the fourth research sub-question: "How is project strategy implementation practiced in an EPC company?" This phase is required to understand the practice of implementing project strategy in an EPC project in company such as Fluor.

Interview is a good method for collection of evidence. This method has various strengths. First, evidence can be obtained by designing interviews to focus directly on topic of interest (Yin, 2006). This research study focuses on the practice of implementation of project strategy within the context of Fluor. Thereby, the interviews are designed to target the practices within Fluor. Another advantage of interviews is that it provides access to the observation of others and the interviewer can understand what respondents perceived and how they interpreted their perceptions (Weiss, 1995). In short, it gathers perceived causal inferences and explanations (Yin, 2006). By conducting interviews at Fluor with subject matter experts belonging to various backgrounds, multiple viewpoints on the topic of interest are obtained. The diversity in the obtained data provides a high degree of insight.

Methodology for conducting interviews: Interviews can be divided broadly into two categories: quantitative and qualitative This type of approach is a qualitative one, it is more flexible than quantitative structured interviews in which the goal is to standardize and generate answers which can be coded quickly (Bryman, 2012). In qualitative type of interview category, analysis of data depends substantially on summarising, interpreting and integrating (Weiss, 1995). It is because unlike quantitative methods, categorising the responses obtained from qualitative approach is difficult (Weiss, 1995).

The main objective behind conducting these interviews is to understand the current practice of implementation of project strategies at Fluor. In order to fulfil the objective, a holistic view on project strategy implementation practices have to be known and documented. The interviews act as tool to gather maximum amount of coherent and dense information set. Taking this into account, qualitative approach is chosen for interviews. It provides better insights into practices of project strategy implementation than the quantitative approach which is restrictive in nature.

Interview protocol: A protocol for interviews is essential for their systematic execution for benefit of the research. The three elements that construct the interview protocol in this research are: interview structure, interview questions, and selection of the interviewees. These three elements are explained below:

(a) Interview structure
A qualitative approach in conducting interviews is found to be suitable in case of this research as explained above. It is important that the interview structure is systematic.

Through a systematic structure, interview could be guided in the intended direction by the interviewer. Various forms of interview structures can be designed and developed to obtain rich and detailed data through qualitative approach (Creswell, 2012). A interview structure depends on what the researcher (interviewer) already knows, as it determines how the interviewer asks the questions (Leech, 2002). There are two opposite ends to the interview continuum: the journalistic and the ethnographic (Leech, 2002). An interview style is chosen on this scale.

An unstructured interview is a style used by ethnographers, it takes a shape of more of a conversation than an interview (Leech, 2002). This style has a downfall that the interviewer might lose track of achieving the intended objective of the interview in the case of this research. Another style is structured interview with closed-ended questions, in this case, the researcher already has ample amount of knowledge (Leech, 2002). And usually the intent is to check if the respondents fall in certain categories of topic of interview (Leech, 2002). This style doesn't provide the detail that this research requires as the style is closed-ended and also, the interviewer can end up receiving responses with lack of content validity (logic behind responses could be missed). There is a style which falls in the middle ground, i.e., semi-structured interview, it provides detail, depth, and an insider perspective (Leech, 2002).

A semi-structured interview provides the qualitative nature to the interviews as opposed to a structured interview. As it provides wider perspective on the topic. To obtain in-depth, detailed and rich information, the questions in the semi-structured interview follows the topics and sub-topics but may not follow the interview script (Bryman, 2012). While conducting a semi-structured interview, flexibility enables the interviewer to follow up on leads and clearing up inconsistencies in answers. Bryman (2012) has emphasized on such flexibility. For these interviews, the flexibility of following up leads and adjusting the upcoming questions to clear the inconsistencies will be practiced with one of the experts from the company. However, in order to ensure effective cross-case comparability (here, case means each interview response), the main structure of interview and the topics to be covered should be the same in every interview. Therefore, a semi-structured interview is used for interviewing within Fluor.

(b) Interview questions

The nature of the interview is chosen as semi-structured as described above. But, the questions need to be carefully designed for the interviewer to maintain the line of inquiry. The questions for the interview are be derived from the findings of Phase 1 of the research (literature review). To be specific, the questions are designed to extract a holistic view of the practice of implementation of project strategy at Fluor. The underlying objective would be to seek for the findings that cause ineffectiveness in the implementation process. This is in accordance with issue-focused interviewing (Weiss, 1995).

(c) Selection of the interviewees

It is crucial to select appropriate panel of respondents to obtain detailed and rich information. It is previously explained that approach of interview is qualitative and

therefore, it demands for in-depth and accurate information. Basically, there are two distinct categories of potential respondents: panel of knowledgeable respondents and sample of representatives (Weiss, 1995).

The panel of knowledgeable respondents are people who are uniquely informative and are experts in an area or process (Weiss, 1995). Whereas, sample of representatives are people who are affected during an event or situation, when taken together display what happens within a population.

Weiss (1995) suggests that when the aim of the study is to describe an event or institution, it would be best to interview people who are knowledgeable (or) experienced. In case of this research, respondents are chosen to provide different perspectives to the same process. Therefore, in order to understand the practice of implementation of project strategy at Fluor, a panel of knowledgeable respondents are selected. The implementation of project strategy at core and tactical levels is driven by the project managers and directors. Hence, project managers at various hierarchical levels of project are interviewed. A panel of seven project managers and directors are interviewed from various projects within Fluor.

Data Analysis: Data analysis and writing is the core element of the interview as a research method. In this research, it is carried out post data gathering so that investigator avoids the possibility of developing insights, speculations and small-scale theories (Weiss, 1995). The interviews are recorded and subjected to transcription, which forms the first step of data analysis. This is done to facilitate logical flow of information (content validity). There are essentially two different ways of analysing the interviews: issue-focused analysis and case-focused analysis (Weiss, 1995).

An issue-focused analysis is deployed if the investigator is concerned about learning about specific issues or events or processes from any and all respondents (Weiss, 1995). Whereas a case-focused analysis is performed when the investigator is focused on the respondent (or) his/her specific case (Weiss, 1995). The case-focused analysis would be useful if the focus is on a certain case or a project. The interviews are aimed to obtain findings on the practice of implementation of project strategy. Therefore, an issue-focused analysis is applicable as the research objective is to focus on issues concerned with general practice of project strategy implementation across various projects.

To execute an issue-focused analysis, this research involves a within-case analysis and a cross-case analysis to derive the final results of the interviews.

Within-case analysis: Within-case analysis commences after first step of data analysis which is transcribing. The interviews are recorded and transcribed. Then, the investigator generates sound and holistic insights from each interview response in the form of simple write-ups (Gersick, 1988). By doing so, unique patterns and findings pertaining to each case individually emerges. The plays an important role as the investigator is now familiar with each case on the issues of implementation of project strategy. It lays foundation to the next step which is the cross-case examination.

Cross-case examination: The within-case analysis is combined with the cross-case examination. Each case is initially analysed as a stand-alone entity, before comparing the cases. A cross case examination is then conducted to search for patterns on differences and similarities regarding practice of implementation of project strategy. According to Eisenhardt (1989): "The idea behind these cross-case searching tactics is to force investigators to go beyond initial impressions, especially through the use of structured and diverse lenses on the data." Further, Eisenhardt (1989) mentioned that "the tactic used is to select categories or dimensions, and then to look for within-group similarities coupled with intergroup differences" (Eisenhardt, 1989, p.540). In this research, the dimensions are derived from the literature review while answering the underlying research questions. The data-sets are then analysed against those dimensions and later, issues (which result from analysis) with project strategy implementation are prioritised.

The steps chosen for analysis are:

- Link to the literature – Based on the findings of the cross-case examination, the issues with the current practice of implementation of project strategy are identified and divided within different dimensions.
- Head count of issues – After the identification of issues, they are prioritised using the head-count method. Here, headcount means the total number of interview respondents mentioning a specific issue. All the issues with headcount ranging from highest mentioned to those mentioned only once are listed. The issues with highest headcount are further investigated to provide suitable solution in the next phase of research.

2.4.3 Phase 3: Development of solution

This phase is dedicated to answer the fifth research sub-question. A solution to Fluor in the form of descriptive procedure would be proposed. Considering the analysis of data from interviews, a list of issues with implementation of project strategy is then identified. A descriptive procedure to solve the issues with highest priority is presented.

Investigation of tools & techniques: An investigative study is conducted on tools & techniques, which are available and identified in literature, to manage the deduced problems in implementation of project strategy at Fluor. This extensive literature review is performed in the later stages of this research process. The first step after analysing the interviews is the selection of suitable best practices for the problems identified in through analysis of interviews. It is important to note that, only the next step involves study of relevant tools & techniques which could bring the suitable best practices into action.

Descriptive procedure for effective implementation of project strategy: The procedure is described in conformance with the findings of data analysis, selection of suitable best practices and investigated tools & techniques. The procedure is shaped around only the prioritised issues causing ineffective project strategy implementation. The aim of this descriptive procedure is to mitigate the issues that hinder the effective implementation of project strategy. This is performed by linking the relevant issues (with project strategy implementation) to the appropriate best practices and tools & techniques, which can control or mitigate these issues around project strategy implementation.

2.4.4 Conclusion and recommendations

The developed solution is a set of suitable best practices and relevant tools & techniques to adopt those best practices as described in section 2.4.3. This answers the main research question and further, closing remarks are provided to conclude the research. In addition to that, limitation of the research is presented. Lastly, recommendations are provided to Fluor which are in accordance with the research objective.

2.5 Reading Guide

This chapter will elaborate on how the research is conducted by aligning the method of research with outline of thesis report. A concise structure of the final report is proposed and adopted. As described earlier, the research is required to be presented in a final thesis report. The following outline is adopted:

Chapter 1 – Introduction

This chapter will explain the topic of research in a broader sense and the motivation to conduct this research. The problem that needs to be addressed will be explained.

Chapter 2 – Research Design

This chapter would elaborate upon research objective and the hypothesis of this research. The direction of the research and the scope of the research would be explained. An explanation would be provided regarding the chosen research method to support it.

Chapter 3 – Literature Review

An extensive overview of relevant literature will be presented. The aspects that determine the basis for the research will be developed.

Chapter 4 – Interviews within Fluor

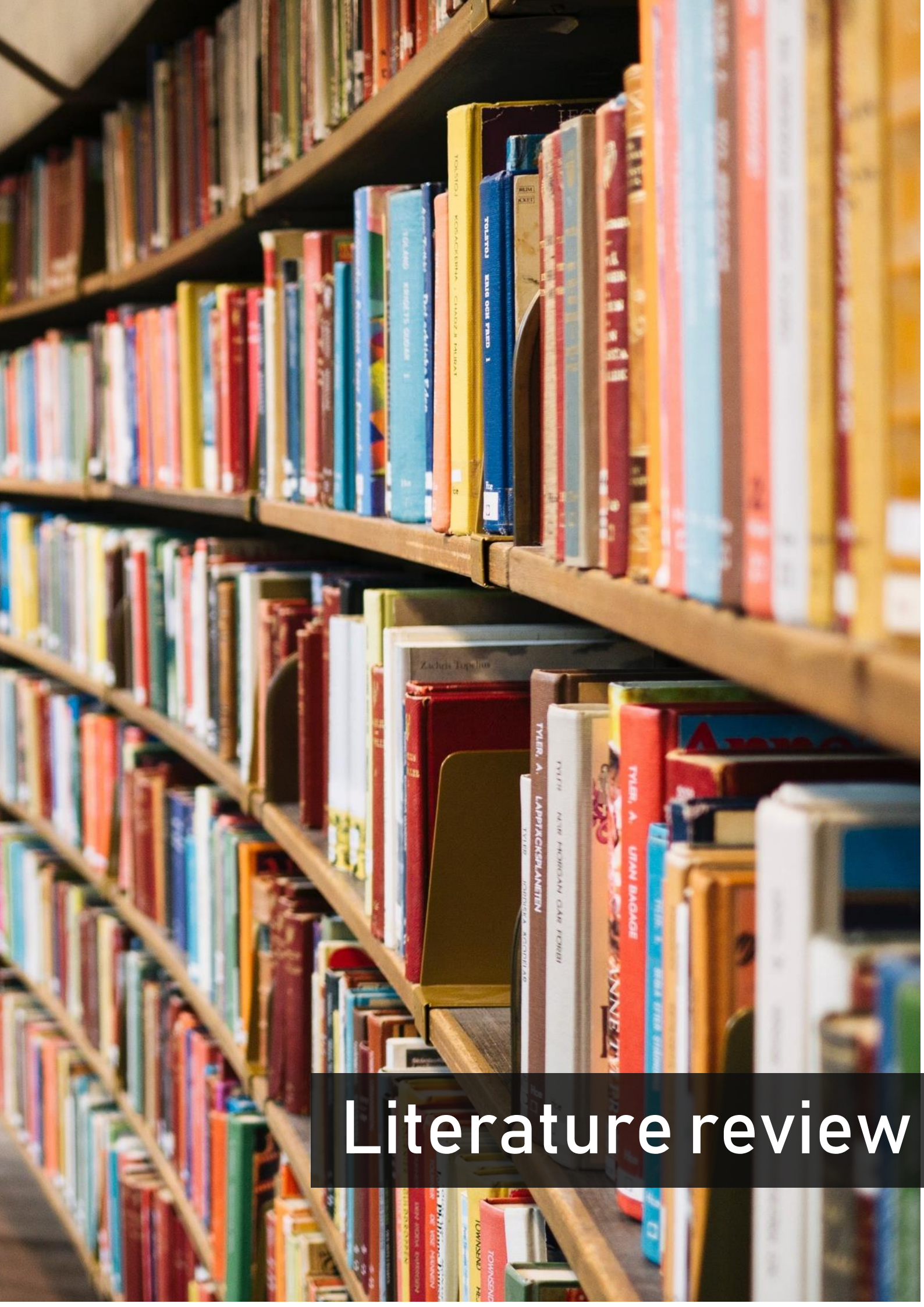
The development of semi-structured interview framework will be discussed. Further analysis of interviews leading to practical findings will be presented. Then, the theoretical and practical findings are translated to form consolidated and meaningful issues.

Chapter 5 – Selection of suitable best practices

Based on the results of interview analysis, suitable solutions are provided. The solutions are presented by relating empirically found issues to relevant literature study. Further, relevant tools & techniques are investigated and a procedure to utilise them is demonstrated.

Chapter 6 – Discussions, Conclusions and Recommendations

The discussion will place the research findings in a wider context of existing literature and practices. The limitations of the research results will also be considered. In the conclusion section, the sub-questions will be answered concisely. The conclusion paragraph will be dedicated to answer the main research question. Based on the discussion and conclusion of this research, recommendations to practice and for further research will be formulated.



Literature review

3 LITERATURE REVIEW

This chapter contributes to a better understanding of the relevant scientific literature and gives an indication on how this research could be embedded within this existing knowledge. In addition, this literature study is conducted to answer two sub-questions of this research:

1. To gain an understanding of how project strategy implementation is described in existing literature.
2. To obtain an overview of the factors that could influence the effectiveness of project strategy implementation.
3. To explore best practices for effective strategy implementation

3.1 Project strategy and its implementation

There are only two widely accepted definitions of project strategy. Shenhar et al. (2005) described that project strategy is the definition of position, the means, and the guidelines of what to do and how to do it, to achieve the highest competitive advantage and the best value from the project. This definition and most of the other literature regarding project strategy is based on the concept that project is not autonomous and project strategy is everything about serving single parent organisation.

Artto et al. (2008) carried out an empirical research with holistic approach towards project strategy. His research took two criteria into account: first, a project's possibility to operate as an autonomous organisation, to seek survival and success in an uncertain and complex environment, and second, to consider strategic options possibly with multiple stakeholders. Artto et al. (2008) concluded their literature analysis with a generic definition of project strategy: Project strategy is a direction in a project that contributes to success of the project in its environment. This definition is designed to allow different kinds of project strategies that individual projects may have. Furthermore, Artto et al., (2008) published an illustration to showcase four different kinds of project strategies based on the above stated two criteria.

Therefore, the research of Artto et al., (2008) is utilised to indicate the current condition of project and its strategy at Fluor B.V. It is marked with a star symbol in figure 2. This mark indicates that project strategies at Fluor lie somewhere between obedient servant and independent innovator. A project classified as obedient servant exists for its parent and the objective for the project is to fulfil its parent's will. A project classifies as independent innovator establishes its direction by encouraging innovative and independent behaviour for finding or maintaining the project's own business and purpose. A project and its strategies at Fluor resemble obedient servant but they seem to gradually progress towards independent innovator segment. This progress could be indicative of changing trends in engineering market (Kent, van den Berg, & Sobolewski, 2017) .

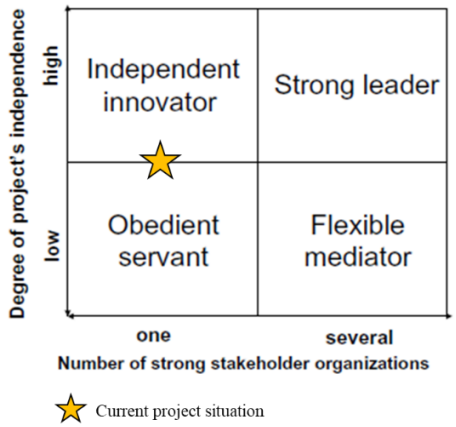


Figure 2 Four obvious type of project strategies depending on project's independence and number of strong project stakeholder organizations (Artto et al., 2008)

In this research, project strategy refers to the strategy of a single project. The term single project indicates that it is a temporary organisation which considers the parent organisation as the most important stakeholder. Such a project is successful when parent organisation receives appreciation, which is measured by how well the project implements and supports the parent's business strategy (Artto et al., 2008).

The relationship between project strategy and project management has attracted the attention of knowledge bodies such as Project Management Institute (PMI) and other independent researchers. This has encouraged research towards the domains of project governance, project business and innovation project management. Yet, the scientific world has seen meagre research publications in the lines of implementation of project strategy.

The inability of projects to effectively execute their project strategies is one of the major factors limiting their success. The project organisation has always focused on their external environment and strategy formulation but not on strategy implementation. Sound implementation is critical – a focus on making strategy work results in a healthy organisation (Pennypacker & Ritchie, 2005). To conclude, strategy implementation is described as primarily an administrative task that involves figuring out workable approaches to executing the strategy and then, during the day-to-day operations, getting people to accomplish their jobs in a strategy supportive and results achieving fashion (Chege et al., 2015).

3.2 Aspects influencing project strategy implementation

Researchers have stressed on the importance of execution at every stage of evolution of strategic management (Alexander, 1985) (Srivastava & Sushil, 2013). Historically, research studies on strategy formulation have dominated the field of strategic management (Hrebiniak, 2006). And thereby, managers have been better equipped to develop strategy than to execute it.

The content of the strategy and the process in which it is carried out are intertwined and affect one another (Pettigrew, 1987). Therefore, formulation of strategy has an important impact on strategy implementation research (Aaltonen & Ikävalko, 2002). The alignment of strategy and

execution is crucial for success in strategy implementation. The essence of management is the act of being under control, and therefore, management is not possible without control (Juran, 1992). Monitoring of execution and use of execution data for feedback have significant impact on effectiveness of implementation (Kaplan & Norton, 1996; Reed & Buckley, 1988).

To conclude, effectiveness of implementation of project strategy could be dependent upon how the project strategy is dealt with in the other phases of project strategy. Other phases of project strategy being: formulation, roll-out and monitoring implementation.

Formulation means the project's mission, objectives, strategies and their value proposition are defined and set. It is the first and fore-most step to winning the battle. Roll-out involves verification and allocation of skills and capabilities, deducing a relatively more detailed version of strategies. Implementation involves discharging (perform) of functions and activities. Monitoring implementation means carrying out evaluation and control measures.

This research takes into consideration, all the relevant phases of strategy that are found to have any kind of impact on the implementation of project strategy in the literature study. A table displaying the sources that have found relationship between implementation and other phases of strategy can be found below (refer table 1).

Table 1 Other phases of strategy having dependency with implementation phase

Dependent phases	**Important highlights**	**Select references**
Formulation & Implementation	The whole potential of the project is determined by the potential of the formulated strategy. Realisation of the potential is dependent on phases following the formulation of strategy.	Aaltonen & Ikävalko, 2002; Favaro, 2015; Tapscott, 2008;
Roll out & Implementation	Plays the binder role between formulation and implementation. It creates a platform for conversion of vision like goals and objectives into tangible activities. This phase involves important task of achieving the project employees' buy-in and attempt to cultivate integration of strategy with work.	Favaro, 2015; McKenzie, Hancock, & Adler, n.d.; Tapscott, 2008;
Implementation & Monitoring implementation	While realising the activities; goals and objectives that are fixed during formulation are influenced by environment of project. They are in constant state of flux. Thereby, implementation needs to be measured and monitored.	Kaplan & Norton, 1996; Reed & Buckley, 1988; Tapscott, 2008;

Aaltonen & Ikävalko (2002) suggested a model for successful implementation of strategies. It concludes that implementing strategies successfully is about matching the 'planned' and the 'realizing' strategies, which together aim at reaching the organizational vision. Mikoluk (2013) uses a different analogy to describe 'planned' and 'realizing' strategies. Planned strategy is described as the strategic plan and realizing strategy as: tactical and operational plan. It is based on the degree of narrowness of a strategy. For instance, more detailed strategy is operational.

This research doesn't focus much on how core strategy, tactical or operational strategy differ from each other. It can be considered as a limitation of this research. Instead the focus is upon attaining ultimate implementation success of any project strategy through smooth transition and alignment of the three levels of strategic perspective. The organisations could think

strategically, plan tactically and act operationally to reduce chances of failure (Bernardo, Anholon, Novaski, Silva, & Quelhas, 2017) (Callahan & Brooks, 2004).

The main aspects that influence the effectiveness of project strategy implementation are listed in table 2. Important highlights regarding each aspect is gathered in the 2nd column of the table. 3rd column comprises of the sources that has provided the important highlights regarding the aspect in the same row. Also, those sources have concluded that these aspects influence project strategy implementation. And this forms the hypothesis of this research that effectiveness of project strategy implementation depends upon the following ten aspects.

Table 2 List of aspects influencing effectiveness of strategy implementation and important highlights from literature

Aspect	Important highlights	Select references
Communication	Communication has the most powerful impact on implementation of strategy successfully. It depends on various factors such as direction & amount of communication, role and skill of middle managers and level of shared understanding. Other strong factors include: channel between management and execution teams for quick problem-solving; and use of feedback on operation data.	Aaltonen & Ikävalko, 2002; Mankins & Steele, 2005; Alexander, 1985; Neilson et al., 2008; Bernardo et al., 2017; Pennypacker & Ritchie, 2005; Cocks, 2010; Raps, 2005; Sterling, 2003; Raupp & Hoffjann, 2012; Atkinson, 2006;
Tools & Methods	Tools & methods of project management should be tuned to meeting the goals of project strategies. There are numerous factors influencing this aspect: Presence of competent project management to handle strategies, adequate analysis of strategies and expectations. It is effective to have alignment and smooth transitions of strategy levels through structured project management. An execution road map could encourage proactive problem identification and forecast. Performance monitoring is most discussed factor that influences implementation – presence of competent tools, communicating performance and easy access to metrics. There must be flexibility in processes to adapt changes through strong change management.	Mankins & Steele, 2005; Alexander, 1985; Neilson et al., 2008; Bernardo et al., 2017; Pennypacker & Ritchie, 2005; Covey et al., 2013; Raps, 2005; Callahan & Brooks, 2004;
Resources	Proper alignment of resources with the given strategy is a critical task to ensure effective strategy execution. Capability base, smooth allocation of funds and time, placing right people at the right place, etc. reflects on resource commitment for any specific strategy.	Srivastava & Sushil, 2017; Mankins & Steele, 2005; Alexander, 1985; Bernardo et al., 2017; Pennypacker & Ritchie, 2005; Boys & Wilcock, 2014; Bower & Gilbert, 2007;
Recognition	Within a project organisation, addressing the consequences of success or failure has its own important role on strategy implementation. There must be clear differentiation in level of appraisal. And leaders must challenge people for the results they are responsible.	Mankins & Steele, 2005; Neilson et al., 2008; Bernardo et al., 2017;
Benefits	In project organisations, it should be made sure that there are rewards for success devoid of project achievements. The assurance that delivering upon performance commitments influences career advancement and compensation, has a great impact on employees' implementation effectiveness.	Aaltonen & Ikävalko, 2002; Mankins & Steele, 2005; Neilson et al., 2008;

Structure	Appropriateness in project organisation design could be fundamental to execution success. Alignment of strategy and various departments plays an important role to ensure desired level of strategic performance. Linking information flow and decision-making process reflects structure-strategy fit. There are other factors that are found to have relevance to strategy implementation: amount of direct and indirect reports, lateral movements upon promotions, and flexibility in structure to adapt to changes and support execution.	Neilson et al., 2008; Bernardo et al., 2017; Pennypacker & Ritchie, 2005; Aaltonen & Ikävalko, 2002; Coulson-Thomas, 2013; Sterling, 2003; Hambrick & Cannellla, 1989; Li, Guohui, & Eppler, 2008; Schaap, 2006;
Culture	Organisational silos and cultures resist execution. Appropriate classification of culture for driving successful implementation of strategies is 'persuade and cajole' rather than 'command and control'. Community-strategy orientation is found to be crucial, that is, intrinsic drive of employees to align their work and skills with strategy.	Aaltonen & Ikävalko, 2002; Mankins & Steele, 2005; Neilson et al., 2008; Bernardo et al., 2017; Pennypacker & Ritchie, 2005; Frigo, 2004;
Leadership	Strategy-suited leadership creates positive atmosphere towards achieving success in implementing strategies. Some of the key components of this aspect are: competence and commitment of leadership, supportive leadership from strategy to execution, involvement of strategy formulators through the process, provision of continuous feedback and focus on key priorities to successfully complete them.	Mankins & Steele, 2005; Alexander, 1985; Neilson et al., 2008; Bernardo et al., 2017; Johansson et al., 2014; Reefke & Trocchi, 2013; Brandt & Edinger, 2015; Naro & Travaille, 2011;
Decisions	Clarifying decision rights is vital for the continual process of strategy implementation: clarity regarding responsibilities and sufficient empowerment is required. In the concept of empowerment, providing certain amount of autonomy of leadership with the execution team was found to be crucial. Then, inclusion of certain personnel from execution team in decision making or roll out also, has huge impact on success of implementation.	Neilson et al., 2008; Bernardo et al., 2017; Chan et al., 2010; Hackett & Wang, 2012;
Actions	Important factors of clarifying action rights are: Re-visiting accountabilities of actions and results periodically, the level of details of key tasks & their clarity, timely clarification of role changes of key persons, and autonomy of leadership within execution teams to drive execution process.	Aaltonen & Ikävalko, 2002; Mankins & Steele, 2005; Alexander, 1985; Neilson et al., 2008; Bernardo et al., 2017; Chan, Ng, & Caismir, 2010; Hackett & Wang, 2012;

These ten aspects are again grouped into four categories: design of information flow, alignment of motivators, organisational environment and clarification of rights. These categories form the four building blocks of effective project strategy implementation. Further, the four building blocks will be explained:

1. Design of information flow

This building block comprises of three aspects namely, communication, tools & methods, and resources. These aspects totally control how information flows in a project organisation to accomplish project strategy implementation. The aspect of communication mainly focuses on the channel of information flow. And tools & methods and resources are the aspects that influence the technique and quality of information flow regarding project strategy.

2. Alignment of motivators

This building block represents the factors of motivation and drive within personnel to contribute to project strategy implementation in the meanwhile able to develop themselves in the project and their career. And that's the reason the aspects: recognition and benefits together constitute the second building block.

3. Organisational environment

Organisational environment has substantial impact on project teams. It is the third building block of the effective project strategy implementation. The three aspects that constitute this block are: structure, culture and leadership. This block addresses the behavioural segment of project teams that acts as a catalyst towards effective project strategy implementation. Also, structure-strategy alignment, as it is crucial to achieve success (Neilson et al., 2008).

4. Clarification of rights

Clarification of rights is the fourth building block and addresses the clarification of two aspects: decisions and actions. Clarification, here, highlights the importance of clarity of responsibility assignments and adequate empowerment to perform those responsibilities. Also, it includes verification of involvement of project team members in certain phases for accomplishment of project strategy implementation.

These four building blocks are inextricably linked (Neilson et al., 2008). For instance, blocking information results in poor actions, limits motivation, and reinforces organisational silos. Another example could be, unclear decision rights paralyze decision making but would also obstruct information flow and prompt work-arounds negatively influencing the project organisation structure.

3.3 Best practices for effective strategy implementation

A best practice is either a method, tactic or process that has been proven through implementation and tested use to add specific and measurable benefits and long-term value (Kerzner, 2010). This research has led to thorough literature study regarding strategy implementation. Both efficiency and effectiveness are important for successful strategy implementation. The literature study indicates that significant focus on both soft and hard elements of an organisation can pave a path to effective strategy implementation.

In the context of this research, best practices could be in the form of methods, tools, techniques and principles. Majority of these best practices are empirically tested to be successful towards effective strategy implementation and few of them are found to be practically successful. In this section, best practices are listed in a table under each aspect that influences strategy implementation. The references which were utilised to gather the best practices are also listed in a column. Further in this section, few hand-picked techniques which are found to be creative and interactive ways to adopt these best practices will be described in detail.

The following table 3 demonstrates the best practices that are found to be positively effective in strategy implementation. Some of the best practices have equal influence on multiple aspects

of project strategy implementation and could be found to be repeated under multiple aspects in the table below.

Table 3 Best practices for effective implementation of project strategy

Aspect	Best practices contributing to project strategy implementation	Select References
Communication	• In global projects, planned regular communication and face to face meetings at certain touch points of the project strategy are effective. • A strong two-way communication during roll-out and implementation in order to brainstorm potential problems, discuss new roles and responsibilities, and to monitor and analyse execution to provide timely modifications to emerging problems. And timely reaction to bottom-up messages. • Important information about project environment should get to project director quickly. With accurate and up-to-date and comparable real-time information, project directors could make smart strategic decisions and trade-offs right on time. • Information freely flows horizontally and vertically across the project organisations. Attention to horizontal information flow leads to integration of departments and better efficiency of implementation. Scheduling quarterly standing performance meetings is a best practice, where departments with interface can exchange information face-to-face and discuss outstanding issues. • Shared understanding about strategy is ensured by communicating it in simple (not abstract) terms and how it is different. And further, spend more time in collaboration with other teams on building the tasks to implement it. • Continuously monitor and communicate about resource deployment patterns and results against plan. Use continuous feedback to discuss assumptions and reallocation of resources. • Establish shared understanding within various organisational levels regarding strategy • Middle-managers possess adequate communication skills and motivation. • Middle-managers dedicate sufficient time to their role in communication • More importance exerted on informal communication than formal communication between superiors and sub-ordinates regarding strategy implementation. • Clear understanding by employees of their contribution to implementation outcomes. • Adequate communication of performance. Compare the implementation results with what is expected from the strategy and communicate it. Creates binding effect.	(Alexander, 1985) (Knight, 2015) (Neilson et al., 2008) (Mankins & Steele, 2005) (Aaltonen & Ikävalko, 2002) (Pennypacker & Ritchie, 2005) (Bernardo et al., 2017)
Tools & Methods	• Integrated strategic management approach. It is an implementation-driven formulation of strategy. • Development of an implementation road-map with probable bottlenecks and contingency responses. • Poorly conceived strategies can't be rescued through implementation. A formulated strategy should be fundamentally sound idea or concept. • Employee commitment and involvement: involvement of relevant employees and managers right from formulation process and while drafting implementation plans is important for success of implementation.	(Hrebiniak, 2006) (Alexander, 1985) (Gupta, 2015) (Pennypacker & Ritchie, 2005) (Bernardo et al., 2017)

	• Align KPIs with objectives of strategy and integrate KPIs with the strategic framework. Also, selected list of KPIs should have a balance of lagging and leading indicators. • During implementation, project organisation manages change effectively and also, presence of effective change management practices. • Adequate performance measurement tools • Presence of a tactical plan: communicating and deploying tactical plans to achieve core strategy goals. Tactical plans create a shared understanding by translating goals into tangible actions. • Project management supports the strategy and its implementation process. • Use of balanced score card as strategy diagnostics tool to obtain feedback through analysis of on-going implementation process and review of results.	
Resources	• Adequate allocation of time to accomplish implementation of strategy • Discuss resource deployments during roll-out and monitor them regularly during implementation against the plan to maintain the strategy on track. • Sufficient resource allocation leads to efficient strategy implementation • Managers' are skilful enough to plan and execute. • Technically sound: implementation teams and leaders have skills and knowledge to conduct translation of strategies into operations. • Financial and human resources have sound connection with strategy. Resource commitment requires: capability base, smooth allocation of funds and placement of right people at right positions (skill match).	(Alexander, 1985) (Mankins & Steele, 2005) (Pennypacker & Ritchie, 2005) (Hrebiniak, 2006) (Bernardo et al., 2017) (Srivastava & Sushil, 2017)
Recognition	• Recognition programme is aligned to project strategy success and project values • Provision of instant recognition prizes during projects • Regular, timely and individual feedback on performance • Adequate opportunity for employees' development • The ability to deliver on performance commitments should strongly influence career advancement • Individuals are recognised and rewarded in order to reinforce the behaviours needed to drive the project.	(Fisher, 2015) (Neilson et al., 2008) (Mankins & Steele, 2005)
Benefits	• Rewards in compliance with core values of project • Regular, timely and individual feedback on performance • The ability to deliver on performance commitments should influence appropriate compensation. • If the project organisation has a bad year, but a particular department has a great contribution in that year, the department head would still get a bonus. • Non-monetary benefits motivate the individuals to do a good job. • Strong alignment between project strategy demands and compensation system.	(Fisher, 2015) (Neilson et al., 2008) (Aaltonen & Ikävalko, 2002)
Structure	• Promotions can also be lateral moves from one position to another on same level in the hierarchy. It is a structural practice which in related to recognition of employees due to their contribution towards strategy implementation. • Fast track employees can expect more frequent promotions. • Flexible organisational structures adapt to new processes that are required for strategies. • Organisational structure offers stability and flexibility: stability to maintain standard work procedures & flexibility to dedicate effort and time to strategic activities.	(Neilson et al., 2008) (Pennypacker & Ritchie, 2005) (Bernardo et al., 2017) (Srivastava & Sushil, 2017)

	• All relevant departments are aligned in terms of project strategy to ensure desired level of strategy implementation results. • Roles and responsibilities, accountability for actions and results, linking information flow and decision-making process are well sorted.	
Culture	• Presence of strategy implementation focus: all managerial levels clearly assume the ownership of implementation. • During implementation, project organisation manages change effectively • Managers and key persons work against power structure. They are able to influence and change others' behaviour. • The culture of the project organisation could be more accurately described as "persuade and cajole" than "command and control." • Clarity to organisational members whether to simply follow rules or think strategically in different situations. As daily routines and standard work procedures prevents members from thinking and acting strategically. • Clear understanding by employees of their contribution to implementation outcomes. • Establishing execution as the key element of the organisation's culture. It influences and shapes the behaviour and attitude of teams, motivates them towards achievement and extrapolation of goals and objectives. • Presentation of results are actively looked at. Emphasis on commitment towards accomplishment of expected results. • Process of new strategies and employees' behaviour is aligned with excellence in execution	(Hrebiniak, 2006) (Neilson et al., 2008) (Aaltonen & Ikävalko, 2002) (Pennypacker & Ritchie, 2005) (Bernardo et al., 2017) (Srivastava & Sushil, 2017)
Leadership	• Managers' are skilful enough to plan and execute. • Informal communication more important than formal communication between superiors and sub-ordinates regarding strategy. • Managers' support and provides feedback through implementation process. They monitor and analyse execution to provide timely modifications to emerging problems. And timely reaction to bottom-up messages. Tactical plans and operational plans are recognized as important. The implementation teams feel powerful and courageous. Leaders are successful in instilling the responsibility.	(Hrebiniak, 2006) (Aaltonen & Ikävalko, 2002) (Bernardo et al., 2017)
Decisions	• Everyone has a clear idea of responsibilities and accountabilities towards decision-making • Decisions must be rarely second-guessed. Due to second-guessing, when decisions are made, they had been vetted by so many parties that no one person could be held accountable. Hint: Immediate managers up on the line may not add incremental value, but a superior with broader or different perspective can add value. • Managers up the line provide support during operational decisions to managers and teams responsible for implementation. • Clarity to organisational members whether to simply follow rules or think strategically in different situations. • Implementation teams are sufficiently involved in strategy formulation. • Autonomy of leadership to the implementation teams to an extent. Project directors and managers provide sufficient creative space, freedom and empower them to be proactive in implementation process. • Roles and responsibilities, accountability for actions and results, linking information flow and decision-making process are well sorted.	(Hrebiniak, 2006) (Neilson et al., 2008) (Aaltonen & Ikävalko, 2002) (Bernardo et al., 2017) (Srivastava & Sushil, 2017)

Actions	• Everyone has a clear idea of responsibilities and accountabilities regarding actions • After agreeing to core strategy, it gets translated into clear execution priorities. A delivery agenda is composed with five to ten critical priorities with greatest impact on implementation performance. Controlling the whole implementation by project director and manager is difficult. So, agree upon priorities, communicate relentlessly and hold the execution leads accountable against the commitments. • Clarity to organisational members whether to simply follow rules or think strategically in different situations. • Roles and responsibilities, accountability for actions and results, linking information flow and decision-making process are well sorted.	(Hrebiniak, 2006) (Neilson et al., 2008) (Mankins & Steele, 2005) (Aaltonen & Ikävalko, 2002) (Srivastava & Sushil, 2017)

3.4 Chapter Summary

In this phase of research, project strategy is defined as a direction in a project that contributes to success of the project in its environment. For the further research on project strategy and its implementation, it is assumed that a project is a temporary organisation with a significant autonomy. Prior to focus on the aspects influencing implementation of project strategy, implementation of strategy is described as per literature.

Four phases of strategy are identified and dependencies among them is described. The phases are namely: formulation, roll-out, implementation, and monitoring implementation. Later, literature study identifies the following ten aspects as influential in implementation of project strategy: communication, tools & methods, resources, recognition, benefits, structure, culture, leadership, decisions and actions. This finding provides a guideline for setting-up of interview protocol. A tabular column (table 2) is constructed to showcase the literature review that creates an understanding of the impact of certain aspects on project strategy and its implementation. Best practices corresponding to each influencing aspect are gathered and tabulated (table 3). This is done in order to lay a foundation for development of solution for the issues to be detected in next phase.


MEDIA
→ FEATURED
IN THE
RIGHT
CHANNEL
- Control
over marketing
materials
- Control +
consistency over
photography
- marketing
challenge
↓ how to
create value
to get clients to
talk to you
.com
CARDS / (5pgs)

Interviews

4 INTERVIEWS WITHIN FLUOR

This chapter provides an overview of the current practice of project strategy implementation in Fluor. To get an insight into practice of implementation of project strategy, interviews were conducted. Section 4.1 discusses about the interview protocol. Furthermore, section 4.2 demonstrates in-depth analysis of the data which was acquired from those interviews.

4.1 Interview protocol

In order to ensure reliability and minimize errors and biases, an interview protocol was prepared containing a list of questions and topics that must be covered during the interview. The type of interview is classified as focused semi-structured interview consisting of approximately 9 open questions along with a score of sub-questions. The interviews were conducted within Fluor, to obtain real-time response from the project directors and managers about implementation of project strategy within EPC projects. For developing the semi-structured interview, the findings from the literature review on factors influencing effective implementation of project strategy were used to design the interview questions (Refer section 3.2).

Every respondent of the interview received an email with general information of the research. The general information includes information regarding interviewer, objective of the research, and the main topics of the interview were mentioned. The email is included in Appendix A.

The interviews took approximately one hour. First an introduction was given and general information about the respondent was asked. The interview consisted of six phases: (1) Definition phase: to define and align the understanding about project strategy, (2) formulation of project strategy, (3) roll-out or communicating the project strategy, (4) implementation of project strategy, (5) monitoring the implementation, and (6) consequences of ineffective implementation of project strategy. The respondents were given the opportunity to raise topics outside the scope of interview questions at the end of every phase of the interview.

During the interviews, it was made clear to the respondents that it is in the interest of the research to respond truthfully and objectively and not on how well the respondent knows about project strategy implementation. The interview was conducted in English and was recorded. After the interview, the recordings were transcribed. A total of seven professionals performing various roles of project management in Fluor were interviewed. The identities of the respondents are not disclosed, they are mentioned by arbitrary names and not by their actual name. For privacy reasons, the interviews are not included in the appendix of the report. General information regarding each respondent is provided in the table below (table 4).

Table 4 General information of each respondent of the interview within Fluor

Name	Role	Years of Experience	Project management course(s) done
A	Project Director	30 years	Within Fluor only
B	Project Manager	20 years	Within Fluor only
C	Project Manager	20 years	Within Fluor only

D	Project Manager	20 years	Within Fluor only
E	Project Director	28 years	Within Fluor only
F	Project Manager	12 years	Within Fluor + PMP
G	Project Director	30 years	Within Fluor only

4.2 Data Analysis

The data was analysed upon completion of interview phase of research. The volume of data that was generated from the seven interviews was huge. Key findings from those interviews were scrutinized and obtained. And, cross-case examination was performed by comparing all the individual findings. A two-step process was incorporated to accomplish cross-case examination. In the first step, link to the literature was utilised. Based on the findings, key issues were deduced, and a head count of the issues mentioned in interviews is demonstrated. This forms the second step in the cross-case examination.

In the first step of linking to the literature, the findings obtained from each interview are divided under various aspects influencing implementation of project strategy (with-in case examination). And, those aspects are: communication, tools & methods, resources, recognition, benefits, culture, leadership, decisions, and actions. There were no findings obtained regarding one aspect namely, structure. The relationship between aspects and implementation of project strategy is described in section 3.2. Now, a cross-case examination of the interviews was done based on the above-mentioned various aspects influencing implementation of project strategy. This is done to compare the findings from each interview with one another. Appendix C contains nine tables where-in, these findings are divided under nine aspects influencing implementation of project strategy.

Through this cross-case examination, common findings were acquired for each of the nine aspects that are influencing the implementation of project strategy. Table 5 shows the findings from cross-case examination of interviews. Furthermore, the findings under each aspect are also discussed in this sub-section. The findings led to identification of issues regarding effective implementation of project strategy in the current practice. The issues will be discussed later in this section.

Table 5 Cross-case examination based on various aspects influencing implementation of project strategy

Aspect	Findings
Communication	• Distance, language, accents and cultural differences form a barrier for effective communication of project strategy within project management teams across global offices.
	• Implementation teams find it difficult to understand and accept project strategy.
	• A good clarity regarding priorities and implications while implementing certain project strategy must be maintained.

Tools & Methods	• The dynamics that arise during implementation of project strategy challenges the translation of project strategy into execution plans.
	• Implementation teams require sufficient orientation to comprehend and implement project strategy.
Resources	• Leaders and implementation teams are required to be up-to-date with skills to successfully adopt new project strategies in their work.
	• Resources to accomplish implementation are not sufficient.
Benefits	• Incentives are usually monetary and remotely linked to project strategy.
Culture	• Creation of bottom-up ownership during development of project strategy is crucial for effective implementation and is observed to be challenging.
	• There is resistance towards new ways of working.
	• The vision could be clearer to gain acceptance easily.
Leadership	• Continuous support and updates to implementation team are required.
	• Possession of strong analytical skills by leaders is good for effective strategy implementation.
	• Sufficient coordination with implementation teams on technical aspects is crucial.
	• Delegation is a critical task for effective implementation.
Actions	• (Re) Definition of actions of implementation teams and their leaders requires attention.

Communication:

The aspect of communication had a significant impact on the effectiveness of implementation of project strategy. It was seen in the interviews that communication between global offices that are involved in workshare is found to be challenging (mentioned 4 times). The respondents stated that distance, language, accents, and cultural differences between members of project management teams act as barriers to effective communication. As one of the project managers described it,

"The distance is a problem. We don't see each other, we don't know each other. Explaining and rolling out strategy on the other side is sometimes difficult."

Also, respondents argued that implementation teams find it difficult to understand and accept project strategy (mentioned 6 times). One of the respondents explains that it could be because of differences in the experience, knowledge and interest between various levels of project organisation. Another respondent states that sometimes even understanding a simple project strategy could be challenging because of the project complexity. One of the project managers said about the issue,

"Employees have problems understanding the strategy … the challenge is, when you almost become blind to what part the others don't understand. Also, when you don't realise what others don't understand."

Further, it was observed in the interviews that adequate clarity about priorities regarding optimising factors, and implications of a project strategy are vital for effective implementation process. And respondents pointed out that these priorities and implications could be made clearer for more effective implementation of project strategy (mentioned 3 times). This can be best illustrated by the following quote by a project manager,

"At project level, price optimization is the priority but at individual level it would appear like creating interface issue … then, it is always like what do we optimise?"

Tools & Methods:

Next, the aspect of tools & methods had a substantial impact on the effectiveness of implementation of project strategy. It was found in the interviews that dynamics that arise during implementation of project strategy challenged the translation of project strategy into execution plans. Basically, these translations are carried out during the strategy formulation phase. With the progress of project, dynamics are introduced in the environment of project strategy and thereby, amendments have to be made in the implementation process. This amending process is found to be challenging. A respondent shared their view from past experiences indicating that it is a challenging task. Also, it was argued by respondents that implementation teams require adequate orientation regarding project strategy to effectively implement it. Also, two respondents pointed out that not seeing the results of work and being unaware of the reason for formulation of strategy could lead to ineffective implementation. To conclude, a general observation is that aligning strategy and operation is crucial for effective implementation of project strategy (mentioned 4 times). In the words of a project manager,

"If faced with ineffectiveness in implementation … focus on change in execution tactics and operations. You cannot change the project strategy, we have to live with it"

Resource:

Furthermore, the aspect of resource is found to have a good amount of impact on the effectiveness of implementation of project strategy. Based on the responses, it is seen that both the leaders and the implementation team require to update their knowledge base and skills to adopt new project strategies in their work processes (mentioned 3 times). Respondents claim that implementation teams need to learn to implement new concepts and technical strategies in work as the changes in the industry and market require additions to the skillset. Or as one of the project managers said,

"There is change in percentage of workshare, required skillset has changed, need to learn to implement new concepts and technical strategies in their work"

One of the respondents even suggested a positive experience with the usage of skill assessment and matching scheme to combat above-mentioned bottleneck. Another respondent indicated that leaders should sharpen their conflict resolution skills to handle the dynamics that arise after

implementing new project strategies. Also, respondents point that resource allocation to accomplish goals could be more realistic and another respondent synchronously indicated that increased schedule pressure negatively impacts employee's perspective towards new project strategy. As one of the project managers quoted,

"Projects are also under increased schedule pressure, people have difficulty to accept project strategy (as a result of it)"

Benefits:

Next, the aspect of benefit has impact on the effectiveness of implementation of project strategy. The respondents indicated that incentives are usually monetary (mentioned 3 times) and also, that they are remotely linked to success of certain project strategy but instead to overall project. A respondent, in general, suggests use of monetary incentives is not the best way to incentivise. Or in the words of a project manager,

"Money is not a great incentive"

Culture:

Further, the aspect of culture had impact on the effectiveness of implementation of project strategy. It was observed in the interviews that creation of bottom-up ownership regarding project strategy is crucial for strategy implementation (mentioned 5 times). Adding to that, it was found to be challenging to create bottom-up ownership due to difference in experience, knowledge, interest and cultures. One of the project managers said about the issue,

"… but make sure it is not top-down approach and is bottom-up approach. Then everybody knows where we are going to, they are involved as well"

Also, respondents pointed out towards the existence of resistance towards change within the implementation teams (mentioned 3 times). Some of the reasons being increased schedule pressure, stress, and challenge of deviating from work processes or demand for new skillset. In addition to this, one respondent suggested that vision could be better articulated to gain acceptance towards project strategies. The issue was described by two project managers as,

"Pressure on the people, stress levels on the teams now as compared to 30 years before is significantly higher. Getting the message across is tough and people don't realise the implications of new things"

"One of the bottlenecks in implementation of project strategy (involving new work processes) is fear of change or resistance to change"

Leadership:

Next, the aspect of leadership is found to have an impact on the effectiveness of implementation of project strategy. It was seen in the interviews that sufficient coordination with implementation team on technical aspects is crucial but also has room for improvement. One of the respondents shares the experience on leadership that lead to ineffective implementation.

Implementation teams were ineffective when supplemented with long term tactics which are less tangible. This can be best illustrated by the following quote,

"I know where I would like to be two years from now. Since it is far away for others to comprehend. I tell people what they have to do for next 3 months. I pick up the strategy and cut it into pieces and that is how I try to implement the strategy as well. But also, to try keeping everybody on board."

Also, another respondent claimed that it is challenging to coordinate with teams for the project manager to fill their gap of technical knowledge by gaining support of sub-ordinates for the project strategy.

Action:

Lastly, the aspect of action is found to have a quiet an impact on the effectiveness of implementation of project strategy. Through responses from the interviews it was understood that (re)definition of actions of implementation teams and their leaders require attention (mentioned 3 times). A respondent argued that discipline leads could balance their role better while handling new project strategies. It is seen that there could emphasise more on knowing what needs to be done in regard to certain project strategy. This could provide a solid road map for the implementation staff. Other respondents indicated that another bottleneck is that implementation teams found it challenging to derive changes in execution work processes after understanding the concept of new project strategy. In other words, it was difficult for implementation teams to understand and implement new ways of execution. One of the project managers quoted about the issue,

"People understand the concept. They don't understand the impact on their work processes and it is their responsibility to understand and deviate from standard work process. And that's where we … (need to focus)"

Issues were obtained based on data analysis and the findings of the cross-case examination. The issues are listed down in table 6. In order to gather detailed insight to recommend solution to the issues, a headcount analysis of these issues was done. This is the second step of the cross-case examination. This is carried out to prioritise the top issues. Headcount of the issues inferred from the interviews is shown below in Table 6. Appendix D demonstrates the comments from the interviewees which were used for obtaining these issues.

Table 6 Head count of the issues that require attention

Issues requiring attention	A	B	C	D	E	F	G	Headcount	Priority
Global office communication		X	X		X	X		4	3
Shared understanding	X	X	X	X		X	X	6	1
Information flow		X	X		X			3	5
Strategy-operation alignment	X	X		X	X			4	4
Knowledge upgrades	X		X		X			3	6
Resource allocation			X		X			2	10
Incentive scheme	X				X	X		3	7
Bottom-up ownership	X	X	X	X		X		5	2
Resistance to new strategies	X		X				X	3	8
Leadership (proactiveness & coordination)		X				X		2	11
(Re) Definition of actions	X		X				X	3	9

It can be observed in table 6, that the greatest number of respondents (6 respondents) mentioned that shared understanding is a hurdle within the teams. Following this, it was seen that bottom-up ownership had headcount of five. Development of bottom-up ownership is crucial and also, found to be a concern through the interviews. Furthermore, global office communication and strategy-operation alignment were also seen impacting the effective implementation of project strategy by the respondents (both mentioned 4 times each). The reasons such as workshare and dynamics of the project have made the aforementioned issues critical for implementation of project strategy.

Further to this, issues such as information flow and knowledge upgrades were mentioned by 3 respondents each. The respondents indicated that knowing whereabouts, establishing sufficient channels of communication is important and is seen as the bottleneck. Free flow of information regarding updates on the project strategy and its implications with changing dynamics require attention. Next, three respondents each mentioned about incentive schemes, and resistance towards introduction and implementation of new project strategies. Also, three respondents indicated that definition of actions could require more clarity especially when the project strategy is new and require new approach to execution. The attributes of leadership such as proactiveness and coordination could be developed more according to two of the respondents.

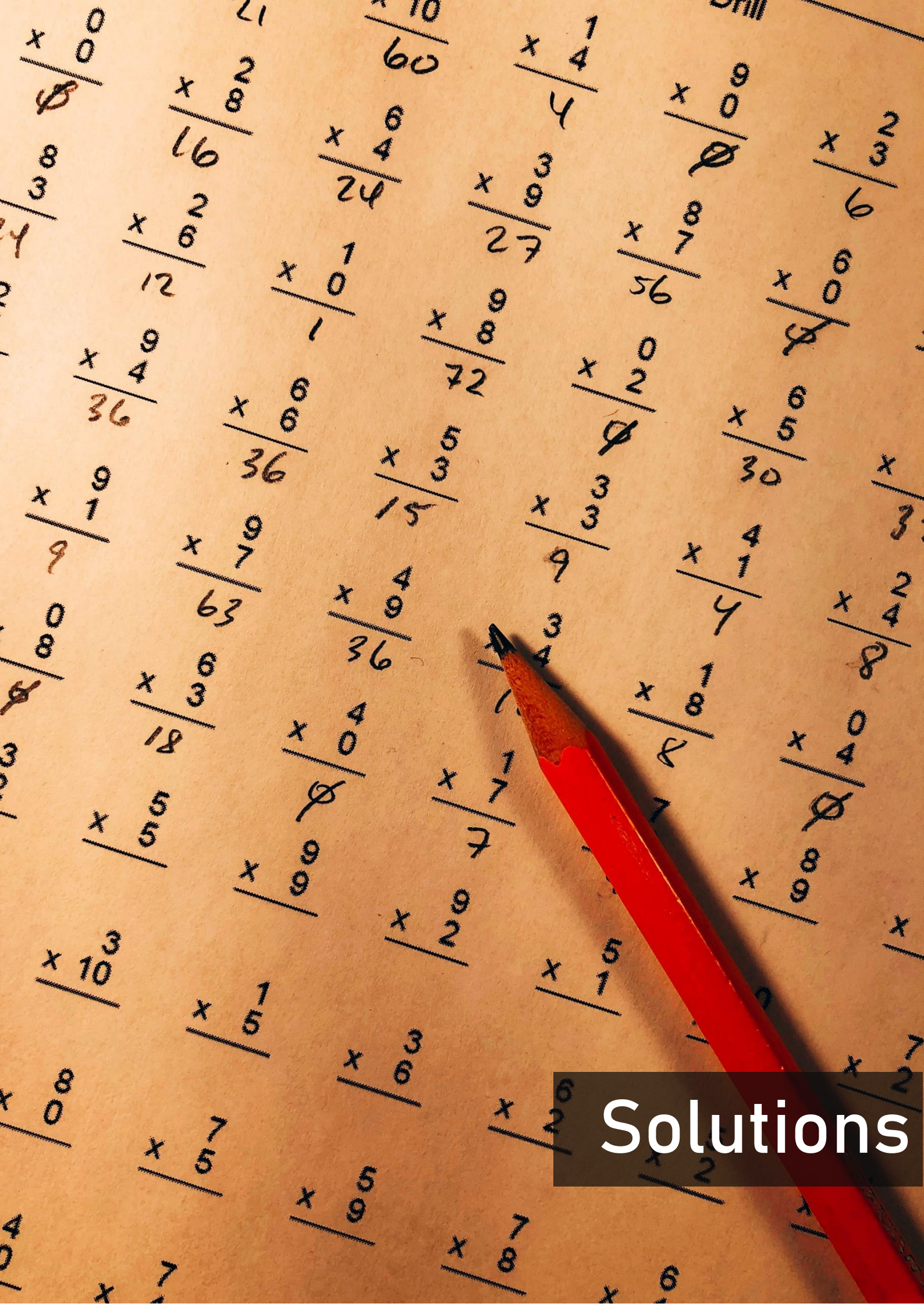
In addition to this, from the analysis it was seen that, all the above-mentioned issues contribute to ineffective implementation of project strategy. These issues are gathered from the interviews with seven respondents. Thereby, for further research, top four issues based on the highest headcount are shortlisted and analysed. The top four issues are as follows:

- Global office communication
- Shared understanding
- Strategy-operation alignment
- Bottom-up ownership

These issues require attention and therefore, best practices to handle them are collected as suggested in the literature. Also, relevant techniques to minimize the impact of those issues are also described.

4.3 Chapter summary

In this chapter, current practice of implementation of project strategy at Fluor was discussed. Semi-structured interviews were conducted to obtain a holistic view upon the practice of implementation of project strategy at Fluor. Project directors and managers were chosen as experts in this subject. A total of seven interviews were conducted. The obtained data was transcribed and analysed. The cross-case examination comprised of two steps in this research. The first step was link to the literature, where the issues inferred from the interviews were linked to the literature of effective implementation of project strategy. The findings were linked to the following aspects of effective implementation of project strategy: communication, tools & methods, resources, benefits, leadership, culture, actions. Following this, the second step of cross-case examination was used, i.e., headcount of the issues with ineffective implementation of project strategy. This was done to analyse the issues that project directors and managers faced during project strategy implementation. The headcount of different issues is shown in table 6 (refer above). A total of 11 issues were identified ranging from headcount six to two. For further analysis, the top four issues were chosen, those are: global office communication, shared understanding, strategy-operation alignment, and bottom-up ownership.


Solutions

5 DEVELOPMENT OF SOLUTION(S)

This chapter presents development of solutions (suitable best practices) to counteract the problems with effective implementation of project strategy. Section 5.1 describes the potential goal of the best practices from the literature study for the identified problem areas. This is based on the inference drawn from the interviews. Later, an investigative literature study describing appropriate tools and techniques that form the suitable best practices is also provided. Section 5.2 provides the overview of the proposed solution set for effective implementation of project strategy.

5.1 Best practices and investigation of relevant tools & techniques

In the previous chapter, all the issues were listed and later, top four issues were shortlisted for further analysis and development of recommendations. Those issues were formulated based on inferences drawn from interviews and also, on any suggestions made by the respondents. The selection of best practices and investigation of relevant tools and techniques forming the best practice are thereby, based on the inferences that were made from the interviews. The best practices must be engaged in order to accommodate these issues.

Based on the information gathered during the data analysis (refer appendix C and D), following inferences are obtained:

- Global office communication: There has been a tremendous increase in the percentage of workshare in the projects at Fluor over the last decade. The work for project at Fluor Amsterdam is shared with Fluor offices at various location across the globe, for instance, India, Saudi Arabia etc. If there are any joint-venture partners, there is workshare accordingly. This workshare varies from project to project. Four respondents indicated communication with global offices as challenging. They found that distance, accent, language and cultural differences acted as bottlenecks. Importantly, one of the respondents felt that distance is the core problem and it aggravated the impact of other three factors. Two respondents stated that this issue leads to inter-office misalignment on project strategy. Any amendments in one of the sub-strategies at other global office influences the implementation of project strategy at the Amsterdam office.

  To conclude with the highlights of this issue, the consequence of poor global office communication is found to be inter-office misalignment. Further, it is deduced that distance, culture and accents make the global office communication a weak link. Table 7 demonstrates the suitable best practice for effective global office communication.

Table 7 Best practices for global office communication

Issue	Suitable best practice	
Global office communication	In global projects, planned regular communication and face to face meetings at certain touch points of the project strategy are effective.	Planned communication, Scrum

Therefore, based on the inferences drawn from interviews and literature on best practices, the practice of planned communication in global projects was investigated (refer section 5.1.1) and also, an agile practice called scrum is described (refer section 5.1.2).

- Shared understanding: In the previous chapter, eleven issues were found based on the analysis of interview responses. The issue of shared understanding is seen to be the most common one. Six respondents presented arguments that pointed towards the issue of shared understanding. Two respondents state that implementation teams don't take time to read project strategy and contract documents and that impacts their understanding. One of the respondents describes that it is difficult to understand what the other person doesn't understand about project strategy. One of the respondent states that lack of acceptance of project strategy is a possible reason for reduced shared understanding. And the lack of acceptance is due to difference in experience, interest, knowledge and cultures. One respondent commented that understanding is a challenge only when new approaches to execution are introduced.

To conclude, all these responses suggest that leaders and teams are facing difficulty in establishing shared understanding about project strategy or sub-strategies. It is because inadequate time is implemented to read project strategy (or) contract by implementation teams; there is difference in experience, knowledge and interest; leaders are sometimes not aware of what others don't understand; and resistance towards new approaches to execution. Table 8 describes suitable best practices to establish shared understanding in aforementioned conditions of work.

Table 8 Best practices for shared understanding

Issue	Suitable best practice	
Shared understanding	Shared understanding about strategy is ensured by communicating it in simple (not abstract) terms and how it is different. And further, spend more time in collaboration with other teams on building the tasks to implement it.	Dialogue-mapping, Gamification
	More importance is exerted on informal communication than formal communication between superiors and sub-ordinates regarding strategy implementation.	
	Ensure clear understanding by employees of their contribution to implementation outcomes. It could be supported by use of techniques with a strong feedback mechanism.	Dialogue-mapping, Scrum

Therefore, based on the inferences gathered from the interviews and literature on best practices, practices such as dialogue-mapping, gamification and scrum were investigated to establish shared understanding (refer section 5.1.2).

- Strategy-operation alignment: It is found through analysis of interview responses that alignment of strategy and operations is challenging. The comments of four respondents show that strategy-operation alignment requires attention and the practices could further be improved for effective implementation of project strategy. A respondent states that implementation teams don't see the results of their work and thereby, they don't realise the implications of what they have done. By this, it can be concluded that it becomes difficult for them to visualise alignment of strategy and operations. The respondent also states that good management and change models are key to success of strategy implementation. Another respondent indicated that it was crucial to make clear to the team about why a strategy was formulated as it influences the alignment of their work. The same respondent shared an experience regarding misalignment due to poor information flow and feedback from a leadership role. These responses provide a picture on various factors that influence alignment of strategy and operations.

It is also important to note that information flow is described as one of the eleven issues that require attention. Based on the data obtained from three interview respondents, it can be deduced that issue of information flow also has an influence on strategy-operation alignment. One of the respondents shares their view that unclear messages regarding priorities affect the alignment of employees regarding project strategy. Another respondent proposes need for allocation of more resources to communication channels for better alignment through the project. Table 9 demonstrates the suitable best practice for effective strategy-office alignment.

Table 9 Best practices for strategy-operation alignment

Issue	Suitable best practice	
Strategy-operation alignment	Adequate communication of performance progress. Compare the implementation results with what is expected from the strategy and communicate it. This creates binding effect.	Balanced scorecard, Informal leadership
	During implementation, project organisation manages change effectively and also, there is presence of effective change management practices.	
	Deploy an integrated strategic management approach. It is an implementation-driven formulation of strategy.	
	Use of balanced score card as strategy diagnostics tool to obtain feedback through analysis of on-going implementation process and review of results.	

	Employee commitment and involvement: involvement of relevant employees and managers right from formulation process and while drafting implementation plans is important for success of implementation.
	Development of an implementation road-map with probable bottlenecks and contingency responses.
	Information freely flows horizontally and vertically across the project organisations. Attention to horizontal information flow leads to integration of departments and better efficiency of implementation. Scheduling regular (constant frequency) standing performance meetings is a best practice, where departments with interface can exchange information face-to-face and discuss outstanding issues.

Therefore, considering the inferences drawn from the interviews and literature on best practices, practices such as balanced scorecard and informal leadership were investigated to effectively align strategy and operations (refer section 5.1.3 and 5.1.4)

- Bottom-up ownership: It was inferred from the data analysis of few respondents that it is essential to create ownership in a bottom-up approach. It was also indicated by some respondents that there is still room for improvement in techniques that create bottom-up ownership at Fluor. One of the respondents stated that it is crucial to involve implementation teams during formulation and roll out of project strategy to create bottom-up ownership. Leaders (project manager) should take right calls and thereby, involve right engineering managers and discipline leads. The interviewees have attributed the bottlenecks in creation of bottom-up ownership to be cultural differences, leadership style, and differences in experience, knowledge and interest. Table 10 describes suitable best practices to establish bottom-up ownership in aforementioned conditions of work.

Table 10 Best practices for bottom-up ownership

Issue	Suitable best practice	
Bottom-up ownership	Clear understanding by employees of their contribution to implementation outcomes could positively influence bottom-up ownership. Appointment of informal leaders and champions could be helpful in adopting this practice by demonstrating correlation between activities of implementation team and strategy.	Informal leadership, Client-centric team development

Even though, Fluor's project management team already applies good effort to create bottom-up ownership, it can still be more effective. Thus, section 5.1.4 and 5.1.5 deals with practice of informal leadership and client-centric team development, as these positively influence bottom-up ownership.

5.1.1 Planned communication in global projects

In a modern workplace, it is increasingly common that project teams are geographically dispersed. Managing remote teams doesn't require an entirely different skillset, instead it hugely demands for a proactive approach (Knight, 2015). Beyond proactive approach, project teams at central office interacting with remote teams require: good communication skills, high emotional intelligence and resilience to recover from the chaotic situations that inevitably occur (Ferrazzi, 2014).

Managing remote teams also demand for right leadership. Project leaders should ensure project teams at central office interacting with remote teams have set clear expectations and ground rules for interactions in advance. These could be clear lines of accountability, schedule for progress check and assurance that all teams are treated in the same way.

Holding face to face meetings especially in early stages of project is invaluable. Visiting on predictable schedules is more effective than frequency of visits (Knight, 2015). The other effective touchpoints for face to face meetings are: onboarding and milestones.

Communication channels should be kept open and transparent at all times. The leaders must make sure his or her teams consider this as an obligation. Impromptu interactions create knowledge free flow in a project organisation (Knight, 2015). The project members at the central office should readily take additional effort to connect to the remote team members. This additional effort is the catalyst for effectively maintaining remote teams.

It requires proactive workers, finest leadership, essential touchpoints and suitable technologies to connect. The right technologies for communicating remote teams are: video conferencing, direct calling, text messages, and virtual teams rooms (Ferrazzi, 2014). Anantatmula & Thomas (2008) empirically concluded that the following five factors have the highest impact in managing global teams:

- Communication
- Leadership and establishing trust
- Stakeholder satisfaction
- Planning, execution, and control
- Fast and reliable information systems.

These factors are synchronous with other literature findings mentioned above regarding management of remote teams virtually.

5.1.2 Establish shared understanding

Aaltonen & Ikävalko (2002) argued based on their findings that creation of shared understanding of strategy among organisational members was a common concern. This problem in communicating the strategy is linked with ineffective strategy implementation. Using a rigorous framework for formulation of strategy is important. Establishing shared understanding regarding the framework and strategy within various organisational levels is even more critical for successful strategy implementation (Mankins & Steele, 2005). The following factors shouldn't be underestimated in enabling collaboration: building right team

structure, implementing right governance model, and putting a process in place (Magers, 2015). The collaboration drives ever-necessary shared understanding.

In a complex situation, when there are people with different point of views, experts in different aspects, everyone wants to create a win-win situation; usually processes to deal with such situation are uncomfortable, unpleasant and virtually impossible. Therefore, shared understanding of the problem is required to proceed to a solution. Project team members attend endless online meetings punctuated by presentations, action plans and timelines. Then, the project organisation has project managers, requirements documents etc., still they lack shared understanding. The missing link is the evolving model representing the current shared dialogue. The following three creative and interactive techniques that induce shared understanding within project members are explained in detail: (a) Dialogue mapping, (b) Gamification, and (c) Scrum.

Dialogue mapping: Dialogue mapping is an outstanding tool for shared understanding. It is a visual facilitation process that creates a map using issue-based information system (IBIS) grammar (Conklin, 2006). It captures and connects participants' comments as meeting conversation unfolds. One can use IBIS to map a conversation using simple post-it notes.

Dialogue mapping comprises of three ingredients: collaborative display, IBIS notation and dialogue mapper. Collaborative display could be a shared screen or wall. IBIS notations are simple and powerful, easy to master and understand. It consists of following notations: Question, Idea, Pros & Cons, and More Questions. A dialogue mapper is the person who listens, guesses, summarises and validates the ideas of speaker. Figure 3 illustrates dialogue mapping listening cycle; this cycle is adopted by a dialogue mapper.

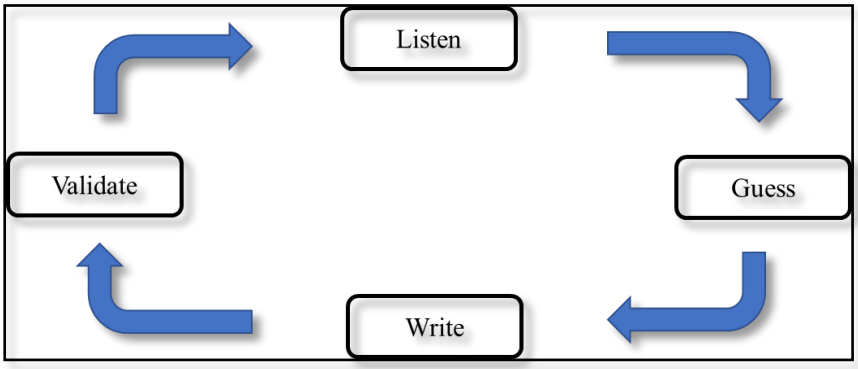


Figure 3 Dialogue mapping listening cycle (Conklin, 2006)

This cycle is different from the common wisdom about listening. Common wisdom is that one waits until the speaker is finished. And then we assume that they said precisely what they meant. When dealing with ill-structured problems, however, it is rarely the case that anyone is really certain about what they mean. So, a dialogue mapper acts a partner to the speaker, actively encouraging them on, and helping them with the difficult job of crafting a clear statement about an unclear topic.

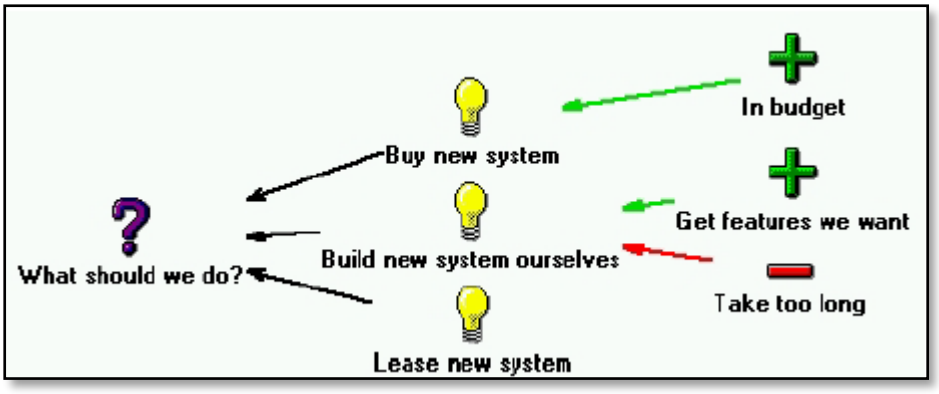


Figure 4 Dialogue mapping sample: beginning of a Build vs. Buy dialogue map (Conklin, 2006)

In figure 4, a very basic map starts with a question and some ideas about answers to the question. There may be pros and cons associated with each idea. In figure 5, discussion continues, it includes the key criteria that would influence the decision. The mapping continues till a unanimous decision is made. The dialogue mapping could be utilised to build shared understanding throughout the project(s).

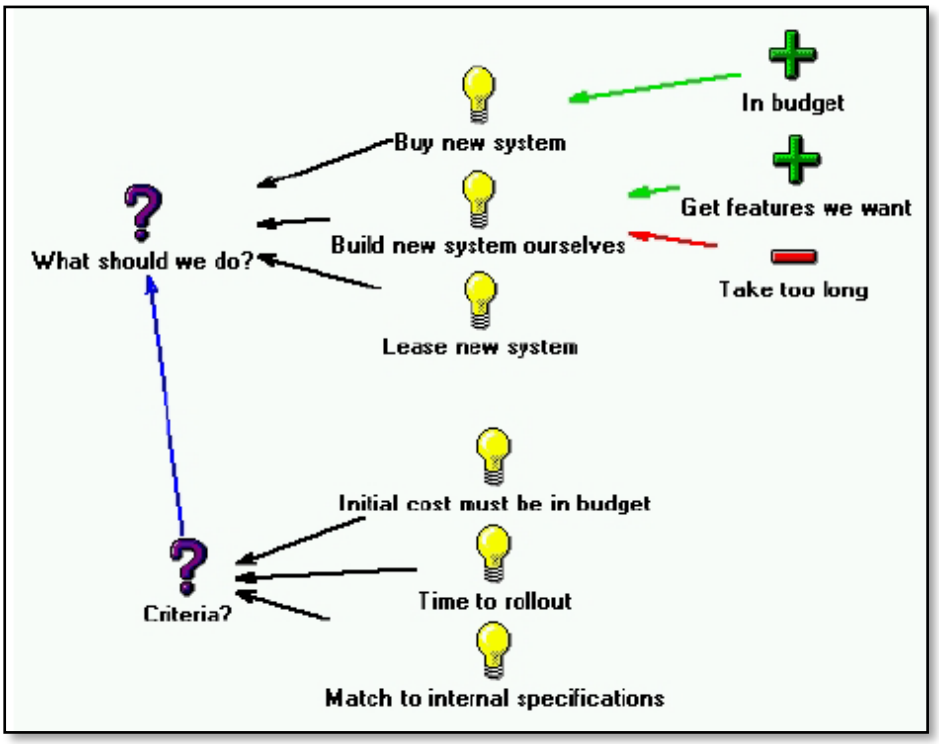


Figure 5 Dialogue mapping sample: evolution of a Build vs. Buy dialogue map (Conklin, 2006)

Gamification: Another practice to create shared understanding is gamification. It is gaining popularity across industries for its contribution towards heuristics. Gamification is an informal umbrella term for the use of video game elements in non-gaming systems to improve user experience and user engagement (Deterding, Sicart, Nacke, O'Hara, & Dixon, 2011) . Key elements of game like design, action, fun, and competition are applied through game mechanics

such as points, badges and leader boards (Rimon, 2016). In our context, user means project team member. It is a technique to motivate interested parties to achieve their objectives (Leclercq, 2015). A simple example of application of gamification is progress wars. In this, the project team has a dashboard displaying progress bar running to reflect project progress or work package progress. Figure 6 illustrates application of gamification in the form of graphic user interface utilised to display progress. It could greatly aid people and motivate them to complete tasks efficiently (Leclercq, 2015).

Figure 6 An illustration of application of gamification to reflect project progress (Leclercq, 2015).

The differences in experience, interest, knowledge, competencies and culture acts as barrier in shared understanding. For instance, knowledge upgrades could be provided to relevant teams (project managers or execution teams) regarding new execution approaches to implement project strategies effectively. Hence, it could bridge the gap of interest and knowledge regarding project strategies to create shared understanding between project management teams and implementation teams. Figure 7 illustrates an example of application of gamification to create learning through game elements. This is usually be accompanied by a leader board statistic. Also, the challenges mentioned above could be dealt by incorporating collaborative work practices. The overall aim of the design games is to help facilitate a user-centred design process for cross-disciplinary groups. Framing collaborative design activities in a game format, arguably improves idea generation and communication between stakeholders (Brandt & Messeter, 2004).

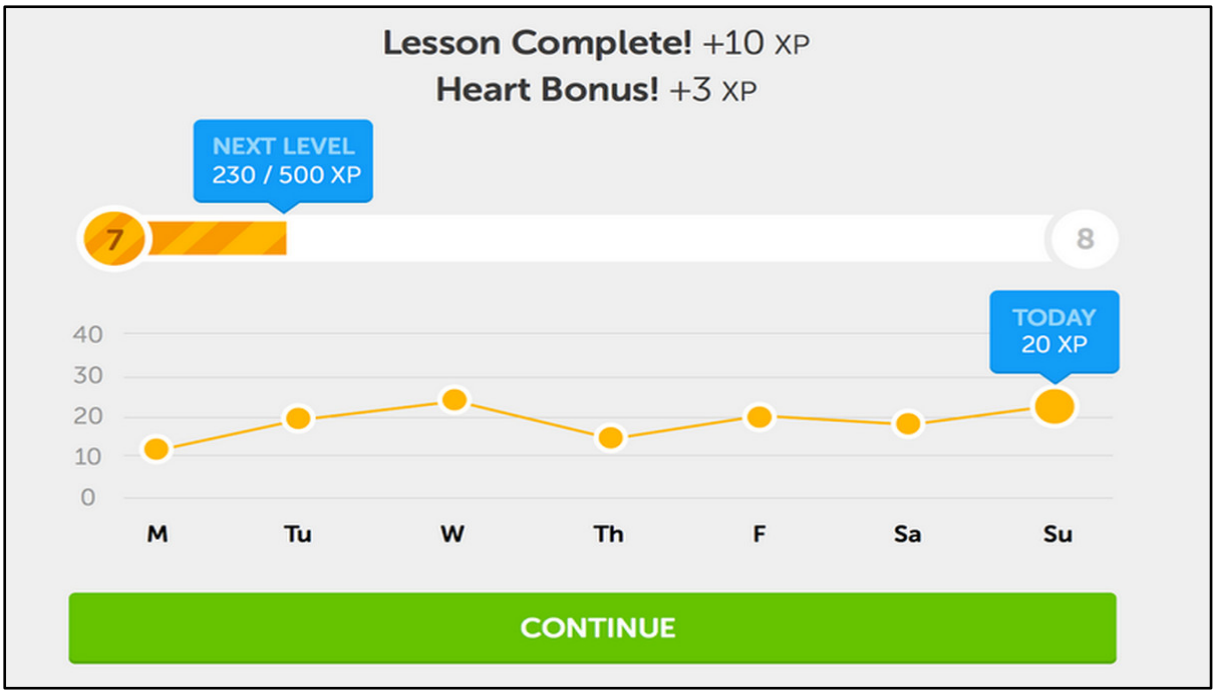


Figure 7 An illustration of application of gamification to reflect learning progress (Gannes, 2014).

Scrum: Scrum is simply an agile, lightweight process for managing and controlling developments in project in a rapidly changing environments (Cervone, 2011). The process of scrum enables improvement in communication, maximize cooperation, as well safeguards teams from impediments and disruptions (Cervone, 2011).

Scrum model is built on three elements: roles, processes, and artifacts (Cervone, 2011). Considering the scope of the research, a brief overview of the three elements is presented as described by Cervone (2011).

Roles within scrum practices are as follows: scrum master, scrum team members and product owner. The role of scrum master is traditionally assumed by project manager. Scrum team comprises of cross-functional members and are self-organised. Leadership within team changes based on the needs of specific iteration (known as sprint). Product owner are usually functional managers who guides the sequence of activities for the progress of project and also, in a way represent the interests of client.

The scrum process has five major activities: the kick off, the sprint planning meeting, the sprint, the daily scrum, and the sprint review meeting. A sprint is a set period of time during which a specific work has to be completed and is ready for review. The planning meeting involves writing down the goals and the work delivery checklist whereas kick-off includes further detailing of the work package to be pursued. Daily scrum is practiced throughout the sprint in which team describes work done so far, work to be done, and hurdles in the executing the work. Review meetings are informal, and work accomplished is presented to and reviewed by the product owner.

Furthermore, there are three components within scrum artifacts: product backlog, sprint backlog, and burn down charts. Product backlog is the overall requirements of the project expressed as prioritized list. Sprint backlog is a subset of product backlog, that are defined as a part of work to be accomplished in a particular sprint. There are again various types of burn down charts, but the aim of those charts is to provide a picture to the teams about the project progress, sprint progress and release dates of the work packages.

To conclude, simplifies project execution by first making the entire project team aware of the project end goal in the kick off meeting which is post-planning. Thereafter, it suggests breaking project goals in parts by setting small goals in sprint meeting known as sprint goals, which are supposed to be achieved by the end of each sprint without any variation. The most advantageous aspect of using scrum is its obligation of having the entire project team aware of the project status. This awareness is achieved by having rigorous project team meeting which is usually obligatory for everyone working on the project to attend.

There are various researches which have been conducted exclusively to test communication efficiency in scrum. Integrated scrums model has all teams fully distributed and each team has members at multiple locations. It is found to have been successful in creating communication and coordinating burdens. It helps to break cultural barriers and disparities in working styles (Sutherland, Viktorov, Blount, & Puntikov, 2007). According to Holmström, Fitzgerald, Ågerfalk, & Conchúi (2006) sprint planning and retrospective meetings improve communication, coordination and team cohesion. There is another perspective of scrum for globally distributed offices that it provides frequent possibilities to communicate across distributed sites. Paasivaara, Durasiewicz, & Lassenius (2008) argues that agile method such as scrum is well suited for distributed setting. And the expected result is improved communication and information flow, as the scrum practice sets the frequency of communication and teams really learn to communicate over time.

Benefits of application of scrum:

- Provides frequent (constant intervals) and structured way of communication.
- Communication between the teams is improved.
- Helps teams to be aware of what another team are doing.
- Helps team to predict in advance about the impact of other teams' work on their teams' work.
- Improves trust and motivation between teams.
- Helps improve perceived quality.

5.1.3 Balanced scorecard (BSC): strategy formulation and diagnostics tool

The concept of Balanced Scorecard is a strategic management system organised in four perspectives namely: financial, customer, internal processes, and learning and growth (Kaplan & Norton, 1996). It aims to establish tangible performance indicators in all functions of the business. This technique proposes to balance concepts that could be contradictory to managers. For instance, it aims to balance between short-term and long-term objectives, financial measures versus operational measures, internal performances versus external performances, enabling indicators versus results indicators and between leading and lagging indicators (Basu, Little, & Millard, 2009). It was recognised by (PMI, 2004; Zagrow, 2003) that the same

benefits an organisation as a whole can derive from the deployment of a Balanced Scorecard based performance measurement system can also be acquired by a project's management. Performance measures enable project managers to track whether the project they are managing are moving in the right direction. Projects provide more than financial benefits, many of the outcomes are intangible in nature. Project managers are breaking the box of traditional objectives and moving towards more softer issues of project quality. The Balanced Scorecard approach enables one to identify intangible drivers and project outcomes (Basu et al., 2009).

Let's take the example of Heathrow Terminal 5 to provide an overview of how British Airport Authority (BAA) executed its quality strategy to achieve its mission to leave behind legacy in quality. Only 120 employees were directly employed by BAA. And, its unique contractual condition demanded: stakeholder commitment, integrated communication, culture that values quality, and best practices in quality; to align its strategy with operations. BAA decided to develop Balanced Scorecard (BSC) based performance system for the T5 project. A T5 performance measurement system is drafted accounting for the four perspectives of a Balanced Scorecard as developed by Kaplan & Norton (1996). Basu et al. (2009) explains three criteria that drive the development of a customised BSC. Key performance indicators were formulated to effectively implement the quality strategy of T5 while it includes the four perspectives of BSC. It is demonstrated in the table below (Table 11). Furthermore, performance measures are planned to quantify the KPIs. Due to the scope of the research, only a brief explanation of application of BSC in T5 project is provided. Application of Balanced Scorecard aims at measuring the progress of tangible and intangible outcomes, thereby, acts as a technique to track and align strategy with operations.

Kaplan & Norton (1996) BSC aspects	T5 Balanced Scorecard KPIs	Type of Indicator
Financial	Benchmarks agreed	Enabling or Leading
Customer	Handover Agreed & Work Complete	Lagging or Results
Internal processes	Inspected & Protected, Compliance Assured	Lagging or Results
Learning & growth	Verifications Planned & Work Supervised (includes supervisor training)	Enabling or Leading

Table 11 T5 KPIs synchronous with Kaplan & Norton (1996) BSC aspects; (Basu et al., 2009).

Explanation of BSC as diagnostics tool and its other applications are described further. On a practical level, BSC can be used by managers to formalize their strategy and support its implementation. And it is proven that BSC contributes to the strategy. Simons (1995) describes diagnostics use of BSC can facilitate control over strategy implementation. Kaplan & Norton (1996) paved the way for an interactive approach to the BSC by suggesting that it might be taken as a device for promoting formulated strategies and organisational learning. But some researchers regard BSC as a rigid form that ignores external influences on strategy.

The strategy map of the BSC serves as a support for collective reflection on strategy. The map could be redrawn if it requires to accommodate recent developments in the project and its environment. The BSC map could be utilised by senior managers to involve sub-ordinates. If running a BSC throughout the project demands for resources, only the strategy map could be used to guide the strategy meetings. Despite its appearance as standardized model, the BSC relates to more complex reality which allows a great variety of design and usage modes to appear (Naro & Travaille, 2011).

Writing strategy themes on paper is one thing and another to actually use them. To implement a strategy theme: Articulate a strategy map across vertical links (financial, client, process and learning & growth perspective). Then, individuals could use the scorecard architecture and measures to gain support for agendas and projects (Kaplan & Norton, 2006). Enthusiasm and constructive discussions would pervade organisation because of the shared understanding of strategy. Well known entities such as DuPont EP and RCMP (Royal Canadian Mounted Police) used scorecards and organized strategy maps around strategic themes to realize their portfolio of assets, people, and skills (Kaplan & Norton, 2006). They realized that replacing one rigid structure would lead to painful series of changes. More flexible and less disruptive approach such as BSC could create a management system to serve as the interface between strategy and structure.

Atkinson (2006) argues that balanced scorecard can address identified strategy implementation issues including: communication (Alexander, 1985); middle management issues (Giles, 1991); clarification of priorities and improved coordination across functions (Beer & Eisenstat, 2000). The balanced scorecard can provide clear targets so that people can know what to do (Corboy & O'Corrbui, 1999); can galvanise down the line leadership and can interpret strategic intent into specific managerial actions (Reed & Buckley, 1988).

There is no doubt that a strategic theme's vertical links across balanced scorecard objectives, measures, and initiatives. See figure 8 for a sample BSC. It creates an extraordinarily powerful system for uncovering opportunities for value creation, communicating priorities to lower level units, and for facilitating reviews of resource allocation, strategy and management effectiveness.

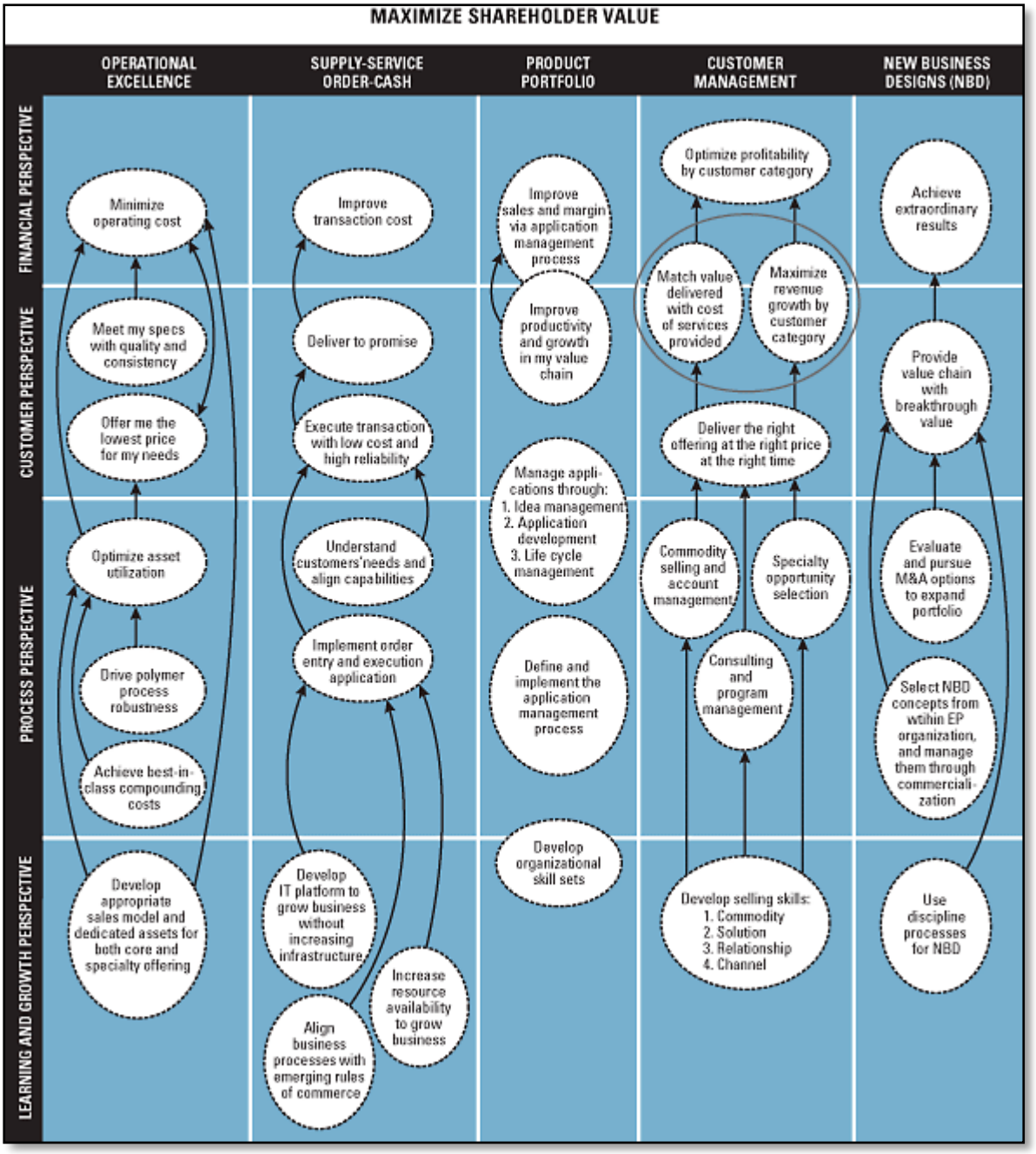


Figure 8 An illustration of a sample Balanced Scorecard.

5.1.4 Informal leaders (or) strategy champions

It is of utmost importance to recognise differences in skills and motivations across the project organisation at a critical juncture. And that is at the project initiation stage (Fotherby, Kingsford, McGill, & Oliver, 2018). The enemy of improvement is tacit knowledge. Breaking out of usual practices is crucial. Thereby, creating a culture that encourage change is a top priority. As Fotherby et al. (2018) suggests that thought leadership would drive change and real courage to try something new.

Lorden, Zhang, Lin, & Côté (2014) describes that before starting continuous improvement initiatives in a project, successful leaders have established a consistent vision of the initiative

for their organisation, designated appropriate personnel including champions and informal leaders, and necessary resources to accomplish that project. The most common reasons for opposition are fear of loss of skills or power and absence of an apparent personal benefit (Leonard-Barton & Kraus, 1985).

5.1.5 Aligning team's work processes & behaviour with excellence in execution

Client-centric team development is one of gathering the focus of project team members towards success in implementation. Client centricity enables a firm to achieve a competitive advantage that has proven to be sustainable and not easily countered by competition. Over a decade, research on client satisfaction as project success factor in EPC industry has gained popularity. Client satisfaction is a very important total quality management philosophy and later incorporated in ISO 9000 quality management system (Tang, Lu, & Chan, 2003). At this moment of time, majority of companies seem to have accommodated client satisfaction as a success factor. Even then, adoption of client satisfaction in project delivery has been evident in only few EPC projects across the world. To most of the others, it is just a success factor.

But there is more to client satisfaction. (Bovet, 2018) explains that client centric team development can get your team connected, engaged and motivated. It drives innovation and induces dynamic approach within teams in order to achieve project goals. The customer's ultimate satisfaction or irritation stems from his or her overall impression over the course of an end-to-end journey, rather than with individual touchpoints along the way (Bhattacharjee, Müller, & Roggenhofer, 2016). Internal communication methods like displays, newsletters and conversations regarding client, their demographics, values and expectations makes them vivid, tangible and brings them on the top of mind of project teams (Bovet, 2018). This creates an intrinsic zeal within teams to accomplish project strategies which are essentially client-centric.

5.2 Overview of the procedure for effective project strategy implementation

In this section, an overview of the recommendation for solving the four issues that were deduced based on data analysis of interview responses is provided. Also, refer figure 9 situated at the end of this section, for an illustration of the overview. There are certain findings (sub-issues) which led to the inference of four major issues. This section demonstrates the use of suitable best practices to solve the sub-issues which form the main issue. The solution set for solving each issue for effective implementation of project strategy is as follows:

Global office communication: Through planned regular communication and F2F meetings at consensual touch points, project managers could improve alignment of global offices regarding implementation of a particular project strategy (or) sub-strategy. The most important criterion is the fixed frequency of communication rather than changing intensities based on deadlines. The practice of scrum, when implemented within projects would rectify the concerns such as cultural differences, distance and varying work styles. The project managers could decide upon the sprint intervals and scope of work to be achieved within next interval.

Shared understanding: Dialogue mapping has the potential to make the line of reasoning visible. For instance, it could be used by project managers to create a shared understanding on selection of a project strategy (sub-strategy) or the process of implementing it. New approaches to execution could be portrayed in a more tangible way to implementation teams. Through the

use of dialogue mapping the line of reasoning would be common for both the project manager and implementation teams, it is possible to rectify differences in knowledge and experience. Also, concerns of project managers such as not knowing what the implementation teams don't understand could be neutralised through dialogue mapping sessions.

The technique of gamification could be utilised for collaborative work practices through creation of a dashboard with game format. Some of the implemented examples of gamification are: (a) providing access to a dashboard to employees to check statistics and receive awards for less sick days and achieved project goals and (b) email game: employees are awarded some points to respond to email messages faster, with time-limit set at 3 minutes. If an issue has higher score in risk register, then time-limit could be still reduced. This technique could be helpful with learning and implementing new approaches of execution.

The scrum technique works for both shared understanding and alignment of strategy-operations because it strengthens the communication, coordination and team cohesion.

Strategy-operation alignment: The balanced scorecard is an effective tool to support implementation of strategy. The strategy map of BSC could serve for collective reflection on strategy and its progress. Therefore, it could solve the problems of implementation team not realising the impact of their work. Balanced scorecard is known for promoting strategies and organisational learning. Thereby, it provides opportunity for good management by project managers as it is deemed important for strategy implementation.

The technique of appointing informal leaders or strategy champions would support alignment of strategy and operations. As it can rectify the issue of implementation teams being unclear on formulated strategy. Information flow could be improved by involving appropriate discipline staff in strategy formulation and conducting quarterly standing f2f meetings between disciplines with interface to discuss outstanding issues and betterment of interface.

Bottom-up ownership: Client-centric team development drives innovation and induces dynamic approach within teams in order to achieve project goals. This technique should be utilised to create bottom-up ownership within implementation teams. By employing this technique, implementation teams start to visualise project strategies as to key to accomplishing project objectives and client satisfaction.

An appropriate leadership is required to rectify differences in experience, knowledge, interest and culture. The Dutch culture has a very pragmatic approach and shows a positive index on long-term orientation (LTO). By providing sufficient information on situation, context and time, this pragmatic approach towards change can be triggered (Hofstede, n.d.). The technique of appointing informal leaders to create awareness and support for the formulated new strategy could bring the positive cultural index in LTO to a good use.

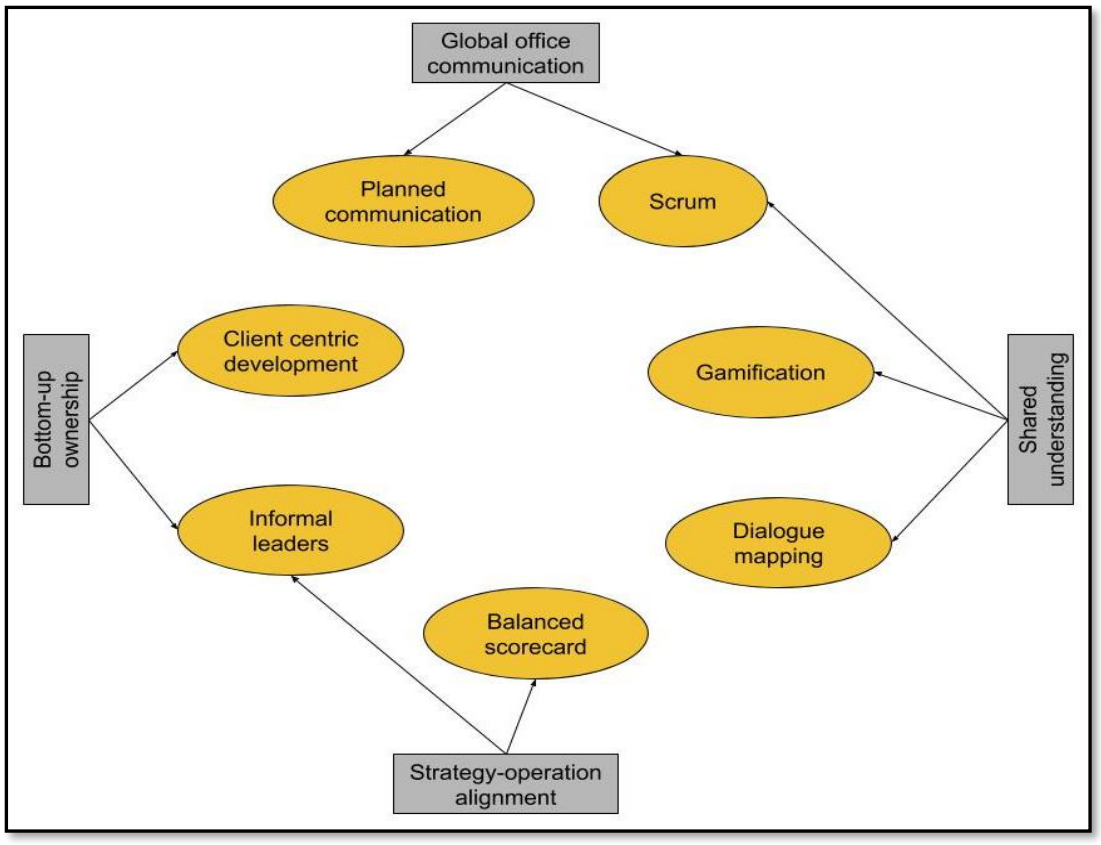


Figure 9 Overview of the tools & techniques for effective implementation of project strategy

5.3 Chapter Summary

This chapter comprises of an overview of the solution set for effective implementation of project strategy at Fluor. Four issues based on highest head count of respondents were selected from the interview analysis presented in previous chapter (refer chapter 4). The four issues were namely: global office communication, shared understanding, strategy-operation alignment, and bottom-up ownership. A detailed inference on each issue is provided and causes behind each issue are discussed based on the data obtained through interviews. Further, in this chapter, solutions for the four issues were provided considering the literature on goals of best practices for effective implementation of project strategy, and investigative literature of suitable tools forming the best practices. Suitable best practices for solving each issue are stated (refer tables 5.1, 5.2, 5.3 and 5.4). An overview of solution set implying the use of the investigated tools and techniques (which form the best practice) to achieve effective implementation of project strategy is demonstrated (refer figure 9). The suggested tools and techniques forming the suitable best practices are as follows: planned communication, scrum, gamification, dialogue-mapping, balanced scorecard, informal leadership, and client-centric team development.

Conclusions

6 DISCUSSIONS, CONCLUSIONS and RECOMMENDATIONS

This chapter provides key insights to provide closure to the research. In section 6.1, the research is discussed. The research findings are scrutinised and further, the limitations of the research are addressed. In section 6.2, the conclusion is presented, in which, the sub-questions are answered and consequently the main research question is answered. Furthermore, in section 6.3 and 6.4, recommendations to Fluor and recommendations for further research are given respectively.

6.1 Discussions

This section comprises of discussion on research findings and limitations of this research. First, a detailed discussion is carried out on the research findings to answer the main research question. Later in this section, the influence of the limitations of the study on the obtained results and conclusions is discussed.

6.1.1. Research findings

The problem which is investigated in this research is the following: Companies executing EPC projects in energy & chemicals industry encounter bottlenecks in effectively implementing project strategy. Based on this problem description, a research question is formulated. This research is conducted to answer the research question and satisfy the underlying problem description. The main research question is:

"How can best practices in project management improve project strategy implementation in an EPC company?"

In order to answer the main research question, research was conducted in three phases. In first phase, a literature review was conducted. As a part of the literature review, a study of concept of project strategy and its implementation, and the advantages of effective implementation of project strategy was carried out. Furthermore, literature review was also conducted to understand the impact of certain aspects on project strategy and its implementation. And a study on best practices in project strategy implementation under each aspect category was performed. This was done as the research focused on improving the practices of implementation of project strategy within Fluor.

In the second phase of the research, interviews were conducted within Fluor. The underlying objective of the interviews was to obtain an insight on the practice of project strategy implementation within Fluor. A total of seven project managers (and project directors) were interviewed within the company. The respondents were either project directors or project managers handling different sub-project. This provided a better understanding regarding project strategy and its process of implementation within Fluor. The author obtained various perspectives towards similar issues, as the respondents belong to various backgrounds and level of hierarchy within the project. This helped the author in better understanding the problems concerned with implementation of project strategy as compared to literature which may provide idealistic situations. The data obtained through interviews was analysed and author gained insights on problems faced by project managers within Fluor in effective implementation of project strategy. The four major issues identified were namely global office communication,

shared understanding, strategy-operation alignment, and bottom-up ownership. This research empirically establishes that there is a need for focus on these four major issues within Fluor to improve implementation of project strategy.

The author noticed that both the leaders and the implementation team require to update their knowledge base and skills to adopt new project strategies in their work processes. A synchronous response from the project managers was received in regard to knowledge upgrade. The project managers preferred implementation teams to have additions to their skillsets to learn to implement new concepts and technical strategies in work due to the changes in the industry and market. The author also noticed that project managers were aware of the organisational cultural resistance towards new execution approaches and novel ideas. But the steps are not sufficiently taken to identify and map the complexity in new work processes and mitigate the resistance (as inferred from the interviews). The respondents provided their perception about the existence of resistance towards change within the implementation teams due to increased schedule pressure, stress, and challenge of deviating from work processes or demand for new skillset. A two-sided resolution including both the project management team and implementation team would be helpful in mitigating the issue. Furthermore, through responses from the interviews it was understood that (re)definition of actions of implementation teams and their leaders require attention. A respondent argued that discipline leads could balance their role better while handling new project strategies. It is seen that there could emphasise more on knowing what needs to be done in regard to certain project strategy. This could provide a solid road map for the implementation staff. Project managers have also indicated that difficulties are faced by implementation teams to understand and implement new ways of execution. (Re)definition of actions of key implementation team members could help to mitigate the issue.

Four major issues were identified during the interviews. During the analysis it was found that, respondents have pointed at a same issue with different reasons and explanations. This is due to the difference in management style of various project managers. These findings were considered while formulating a descriptive procedure. In the third phase, a solution set was proposed for performing effective implementation of project strategy through mitigation of those four major issues. Suitable best practices were proposed to counteract the four major issues. In this process, initially, the goals for best practices were selected based on the initial literature study and inferences made from the interviews within Fluor. Further, an investigative literature study was performed to explore and select appropriate tools and techniques which form the suitable best practices. As mentioned before, differences in management style of project managers could be noticed within interviews. Some suitable best practices could be easy for few project managers to adopt as compared to others because of their difference in style of work. For instance, majority of project managers (based on interview responses) are aware of the importance of communication within global offices. So, the required amount of improvements could vary from one project manager to another depending on their awareness. The same goes with better planning and allocation of resources (roles) for communication.

Importantly, the research introduces techniques such as dialogue mapping for creating shared understanding and concept of appointing informal leaders, who are essentially subject matter experts (non-reported) in new approaches of execution and who settle important issues within disciplines and at interfaces.

6.1.2 Limitations

This section discusses the limitations of the research findings. It is important to address and acknowledge these limitations before using the findings from the research. The limitations are the following:

- The research was conducted based on interviewing the project directors and managers within the company. It partially takes the view point of the implementation team regarding project strategy implementation. Incorporating these different perspectives would yield in developing a deeper knowledge on the problem of effective project strategy implementation. These different views were not taken owing to the time-schedule of this research.
- The selection of suitable best practices is not validated with the employees at the company. The conclusions drawn may vary if it were validated by employees at the company. This couldn't be performed owing to the time-schedule of this research.
- For this research, the fundamental premises related to project strategy is a very small amount. So far, only project strategy has been defined as per published research. And there is an inadequate amount of scientific publications regarding implementation of project strategy (considering, project as a temporary organisation). The conclusions may be more matured if this research were performed on a stronger premise.
- The research was conducted within one company. Hence, it does not directly imply that problems faced in project strategy implementation would be same across all the companies undertaking EPC projects in energy and chemicals industry.

6.2 Conclusions

This section provides a conclusion to the conducted research. Here, the conclusions of five research sub-questions are discussed. Based on the conclusions of the sub-questions, the main research question is answered. The sub-questions are answered and concluded in a sequential order to reach the solution for the main research question:

1. *How is project strategy implementation described in literature?*

Project strategy implementation is described as a task that involves identifying workable approaches to execute project strategy, thereby, providing direction in a project to contribute success to it.

There are only two definitions that are available for project strategy in the scientific research database. Shenhar et al. (2005) described that project strategy is the definition of position, the means, and the guidelines of what to do and how to do it, to achieve the highest competitive advantage and the best value from the project. Artto et al. (2008) concluded with a generic definition of project strategy: Project strategy is a direction in a project that contributes to success of the project in its environment. This research adopts the definition provided by Artto et al. (2008). Because further research on project strategy and its implementation, it is assumed that a project is a temporary organisation with a significant autonomy. The assumption fits with the definition and research of Artto et al. (2008) about project strategy.

There is insufficient research work published with concern to implementation of a project strategy in which project is considered a temporary organisation and has substantial amount of autonomy. Thereby, description of strategy implementation in organisations spread over various industries is utilised to kick start the research on project strategy implementation. Strategy implementation is described as primarily an administrative task that involves figuring out workable approaches to executing the strategy and then, during the day-to-day operations, getting people to accomplish their jobs in a strategy supportive and results achieving fashion (Chege et al., 2015).

2. *What are the factors that influence the effectiveness of project strategy implementation?*

The effectiveness of implementation of project strategy is found to be dependent on various phases of a strategy. Four phases of strategy are identified and dependencies among them is described. The phases are namely: formulation, roll-out, implementation, and monitoring implementation. Later, literature study identifies the following ten aspects as influential in implementation of project strategy: communication, tools & methods, resources, recognition, benefits, structure, culture, leadership, decisions and actions. Important highlights regarding each aspect from various sources are collected and demonstrated to showcase the impact of these aspects on implementation of project strategy (section 3.2).

3. *What are the best practices for effective project strategy implementation?*

The information gathered while performing literature study on the factors influencing implementation of project strategy was used as a starting point for exploring best practices. A strong connection was observed between best practices in project strategy implementation and

the factors influencing project strategy implementation. Majority of the best practices are related to multiple aspects in practice. However, in this research, best practices are aligned with a single aspect based on their empirically proven dominant relation to that single aspect. But some of the best practices cannot be assumed as completely stand alone, and require further investigation of appropriate tools and techniques to form the complete package of implementable best practice.

Refer section 3.3 for description of aspect-wise best practices for effective implementation of project strategy in detail.

4. *How is project strategy implementation practiced in an EPC company?*

The interviews provided a glimpse of process and issues requiring focus around implementation of project strategy. Project managers within Fluor were chosen as respondents, considering them as subject matter experts for this research topic. The priorities of project managers and their managing style of various phases (and aspects) of project strategy were found to be different (refer Appendix C and D). A total of 11 issues were identified post-data analysis of interviews conducted with Fluor. The headcount of issues varied from two to six. These 11 issues were found to be related to 7 influential aspects of project strategy, namely: communication, tools & methods, resources, benefits, culture, leadership, and actions. Based on priority, top four issues for further research were chosen, those are: global office communication, shared understanding, strategy-operation alignment, and bottom-up ownership.

The data analysis of interviews within Fluor is elaborated in chapter 4.

5. *What are the suitable best practices to achieve effective project strategy implementation in an EPC company?*

Considering the inferences drawn from the interviews and scope of the research, suitable best practices were selected to solve four issues with top priority. A best practice is either a method, tactic or process that has been proven through implementation and tested use to add specific and measurable benefits and long-term value (Kerzner, 2010). By solving the four issues mentioned in sub-question 4, effective implementation of project strategy could be accomplished to a certain extent in the EPC company.

In this research, first, the required goals for best practices to counteract the 4 major issues are suggested. An investigation was done to explore tools and techniques to form implementable best practices. The investigated tools and techniques are practiced across various industries by professionals. The selected best practices (tools/techniques) have proved record of providing benefits and have clear applicability to at least one of four issues mentioned above. Thus, these best practices are deduced to be suitable in the context of this research. Also, the selected practices are applicable in versatile situations and are not specific to any particular industry.

Based on each issue (total four issues), suitable best practices are described which can be referred to in tables 7, 8, 9 and 10. The following set of seven tools and techniques (best practices) were investigated and obtained from literature:

- Planned communication (for global projects)
- Scrum
- Dialogue-mapping technique
- Gamification
- Balanced scorecard
- Informal leadership
- Client-centric team development

The explanation of solution set for solving the issue of ineffective implementation is provided in section 5.2.

6.2.1 Answer to the main research question

This study aimed at answering the following research question: "How can the best practices related to strategy improve implementation of project strategy in an EPC company?"

On the basis of literature review and the interviews conducted within Fluor, suitable best practices in the form of a set of seven tools & techniques are proposed to improve the effectiveness of implementation of project strategy. A solution set recommending implementation of suitable best practices by adopting the tools and techniques is provided in chapter 5.

The suitable best practices aim to solve the four main issues that contribute to ineffective implementation of project strategy within Fluor. The selected best practices are exclusively based on aspects that are essential for strategy implementation success. And the tools and techniques are selected as per their relevance to solve the four issues. A figure illustrating the tools & techniques to solve the four issues is shown below (figure 10):

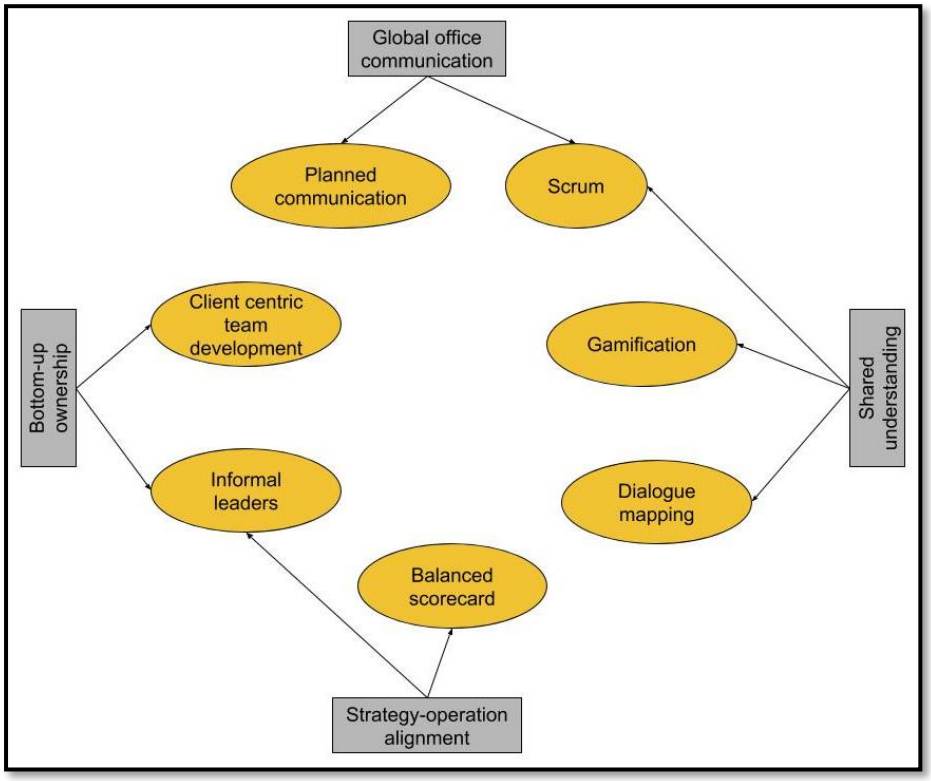


Figure 10 Overview of the tools & techniques for effective implementation of project strategy

6.3 Recommendations to Fluor

In this section, recommendation to Fluor are provided based on this research study. Sub-section 6.3.1 provides recommendation for implementation of suitable best practices and relevant tools & techniques as concluded through the analysis in chapter 4 and 5. General recommendations to Fluor for effective implementation of project strategy are stated in sub-section 6.3.2.

6.3.1 Recommendations to Fluor for implementation of best practices

In this sub-section, recommendations are provided to Fluor on the implementation of suitable best practices and relevant techniques in their work processes. Hints and findings based on the interview responses are utilised to provide the recommendations on how to adopt the solution.

Improvements in design of information flow

It was found through the analysis of interviews that three out of four issues with greatest headcount are related to design of information flow. The three issues are as follows: global office communication, shared understanding and strategy-operation alignment. Therefore, improvements in the design of information flow could create a strong impact in the present scenario of project strategy implementation at Fluor. It is recommended to implement suitable best practices and relevant techniques to improve the design of information flow. It is observed through interviews that setting up information flow channels (or) communication channels varies from one project manager to another. Based on the responses, it can be interpreted that allocation of time to communication and deployment of communication channels are usually insufficient than required. And it also observed that the project managers are keen on improving it throughout the project organisation.

In chapter 5, suitable best practices addressing the above stated three issues are discussed. And it is imperative to implement the tools and techniques to bring those best practices into action. The project managers must implement planned communication (or) scrum practice to effectively communicate between global offices. A procedure of planned communication should be prepared by project managers of sub-projects and discussed with their counterparts in other global offices. This should be done to set expectations and ground rules of interactions. And project managers could share their procedures in a reflection meeting to obtain feedbacks from project managers of other subprojects. Through the interviews, it was found that the project managers at Fluor usually reflect upon ideas and strategies with peers. Therefore, reflections on procedures to implement planned communications would also be a way to create awareness about the best practice. Next, counterparts at the management level could also deploy scrum practice to improve communication between global offices. It could be on weekly basis or daily basis based on the consensus of counterparts. But the frequency has to be maintained, as it is the key. But planning of deploying scrum would take added effort of pre-planning the scrum meetings to set targets and allocate members of the meeting and their roles.

The technique such as dialogue mapping could be deployed to improve shared understanding. And based on the information from interviews, dialogue mapping could have vital role in creating acceptance, and setting a clear line of reasoning and priorities. Therefore, dialogue mapping sessions during rolling-out of strategies could be beneficial to solve the bottlenecks in shared understanding. As per the responses, alignment meetings could be a right place for using dialogue mapping during implementation phase. Gamification is the technique to create

game-type environment in non-gaming scenarios. Based on the interviews, it is known that differences in knowledge, interest, and experience influences shared understanding within Fluor. Therefore, gamification could be deployed to encourage learning and knowledge upgrade regarding certain new execution approaches or strategies (for instance, advanced work packaging). This would create interest within implementation teams and also, a step towards dissolving the barrier of understanding. Both the techniques enforce collaboration, creation of informal information sharing experiences and ensure that employees understand their contribution to outcomes. Also, daily or weekly scrum meetings is another way to establish shared understanding.

Techniques such as balanced scorecard and appointing informal leaders is recommended to adopt the suitable best practices to improve strategy-operation alignment. Balanced scorecard can be utilised for formulating and diagnosing strategies. In this research, it is recommended for aligning strategy and operations and to be used as diagnostic tool. The task of discussing or restructuring the strategy map in a balanced scorecard serves as a support for collective reflection. And, also it sets the priorities clear and improves coordination across functions on strategy. It provides an opportunity for managers to communicate progress and compare the strategy and implementation. The strategy map could act as a foundation to the implementation road-map. Since it specifies the objectives, measures and initiatives to be carried out. And could be beneficial for project managers to align the tactics to the core strategy. Based on the findings resulting in the issue of alignment, balanced scorecard could be an answer to better articulation of the project strategies' vision and objectives. The technique of appointing informal leaders is recommended to create employee commitment towards project strategy. This would better align the work of implementation teams with project strategy. Informal leaders who are basically subject matter experts could schedule quarterly standing meetings to exchange information f2f and monitor the discussion of outstanding issues between horizontal departments. It would improve the information flow horizontally and vertically across the project organisation.

Improvements in organisational environment

Organisations with traditional and power structure have strong affinity to standard work procedures and strong intrinsic resistance towards strategic initiatives. Based on the analysis, a shift in project organisation's culture and bringing informal leadership roles is required for improvement in the present scenario of bottom-up ownership. Project managers should orient their teams to be client centric to influence execution. The correlation of contribution of execution teams towards outcomes requires strong demonstration to create cultural influence (Aaltonen & Ikävalko, 2002). It is recommended to create link between project strategy, work of implementation teams and client requirements. Internal communication methods like displays, newsletters and conversations regarding client, their demographics, values and expectations makes them vivid, tangible and brings them on the top of mind of project teams (Bovet, 2018). Furthermore, leaders should encourage strategic thinking and instil responsibilities. Responsibilities must be projected as empowerment and influential, and not mere extra activities to accomplish job. Also, informal communication is really important for achieving success in strategy implementation (Lorden et al., 2014).

6.3.2 General recommendations to Fluor

In this section, recommendations are provided to Fluor to improve project strategy implementation. The recommendations are enlisted below:

- Inferring from discussion in interviews, it is suggested that involvement of relevant stakeholders during initial phases of formulation or roll-out of strategy should be practiced. Even though some relevant stakeholders don't possess certain skills to envision and draft strategies during formulation and roll-out, if they possess execution-oriented skillset, their inclusion could have great impact on execution success and their self-interest to involve in shaping strategies would increases with time. This is possible through encouragement by senior managers and leaders who are key persons in formulation.
- The project leaders argued about a lack of knowledge upgrade for implementation of technical concepts of certain project strategies, for instance, construction work packaging. It is recommended that, the project management team should devise better workshops or introduce dedicated work procedures for execution teams, if the span of project strategy is comparable to span of project life. This could facilitate the process of implementation of strategies in a smoother way.
- It was seen in interviews that project managers are over-optimistic about resource commitment while formulating project strategies. It is recommended based on the suggestions from the interviews that at least in projects with new project strategies the resource commitments and targets are more realistic and project specific. New project strategies are strategies which are new in the industry or a popular strategy with new approach to execution.

6.4 Recommendations for further research

In this section, recommendations for further research into best practices for effective project strategy implementation are provided. These recommendations encapsulate the aforementioned research limitations:

- Further research should be done on ways of implementing these best practices within project organisation of Fluor.
- In this research, a total of seven professionals holding project management roles were interviewed. Hence in order to get a holistic view, more engineering managers and leads of disciplines forming the middle and lower-level management should be interviewed.
- The list of suitable best practices could be validated within company, further research should be done to the applicability of this suitable best practices in the projects. This includes testing the proposed list of suitable best practices within a project which is implementing a new project strategy.
- Further research should be done to investigate the extent of generalizability of the best practices in project strategy implementation in projects with traditional project management.
- This research was based on the fact that traditional project management is being practiced in projects. An interesting area for further research should be to look at how project strategy implementation varies with change in project management style.

- Further research should be done to investigate the alignment of aspects influencing implementation of project strategy. It should result in establishing a project strategy implementation framework. Hence, quantitative analysis to determine the interdependencies between aspects should be performed.

6.5 Reflection

In this section, the author reflects upon his graduation research that he conducted at Fluor B.V. as a part of his study programme at TU Delft.

The author performed this graduation thesis from January to August, 2018. The author encountered various challenges over the span of seven months of research. Coming from a civil engineering background and having undertaken the courses of construction management and engineering, author found the opportunity to conduct research with Fluor as a fascinating one. The author had limited idea about energy and chemicals projects and the services. It was challenging to comprehend the complexities involved in the energy and chemicals projects carried out by a multi-national company such as Fluor. The author interacted with lot of colleagues at work and involved in various company activities at Fluor to get a glimpse of the kind of work and the end product. It is the first time the author is conducting a research with the involvement of both the university and the company. It was quite challenging to balance the interests of two parties after meetings. However, over the time author was better able to manage it through peer reflections done after the meetings.

Through discussions with the company supervisor, author realised the presence of improvement windows due to complexities in technological, organisational and external factors within projects executed at Fluor. After a number of consultations with the committee members, the topic of research was formulated to investigate various bottlenecks faced during the implementation of a strategy. The domain of project strategy is still in its infant condition at the scientific level and that triggered the interest of the author. The author engaged in several discussions with the staff at Fluor to understand how teams understand and pursue project strategy and also, to obtain a glimpse of the culture and the information regarding market demands. Due to author's inexperience with scheduling the meetings well in advance, a delay (around four weeks) occurred in conducting the kick-off of the research.

The author conducted qualitative interviews as a part of the research. This research technique was completely new to author and he faced innumerable challenges in executing it. The biggest challenge was to gain great amount of information using the questionnaire. In short, formulating an effective questionnaire by constructing a logical bridge between literature review, questionnaire, and expected data collection was extremely challenging. Also, the author wanted to accomplish graduation by the month of August, as result of which there was significant impact on quality of interview questionnaire since there was short span of time to gain multiple feedbacks on the questionnaire and incorporate them. As a result of the time squeeze, number of interviews conducted were limited to seven and only the project directors and managers were involved. Author could have performed few more interviews with sub-ordinates of project managers to obtain complete view of the path of project strategy. A second set of interviews with independent project managers outside Fluor and also, with clients could have been possible to gather a better insight on missing parts of the puzzle in this research.

In addition to that, transcribing and data analysis was also challenging. The process of transcribing the interviews was a difficult task because of the complexity of project organisation structure as it was difficult to comprehend the point of view of the respondents and their priorities. Integrating and then channelizing various views for the purpose of data

analysing was difficult. The guidance of the chair of the committee and its members was crucial for the author during this phase of research, to interpret and later, produce valid data.

Furthermore, one of the major challenges that the author experienced was to structure the report and compile the findings. A transition between academic environments (from home country to Netherlands) had its influence on the report writing ability of the author. The demanded skill was higher than what authored was exposed in the past. Author's fear of report writing lead to a delay in commencement of report writing. Later, author faced difficulties in communicating his research story to the committee. Various suggestions were provided to the author by the committee regarding structure of the report from time to time, but author couldn't show substantial improvements. Author was frustrated due to inability to progress as he had to perform multiple iterations and reworks. The author takes this as an opportunity to express his gratitude for the guidance especially provided by his first and second supervisor for the detailed feedback and suggestions with examples of research methods on how to improve the structure and line of reasoning. The author also feels indebted to company supervisor for their support in writing this report. The company supervisor utilised illustrations and visual examples to provide an idea on how to report the findings and made sure that the author had clear idea of the feedback at the end of every discussion. All these made author make huge improvements in a short span of time.

The author feels that a little bit extra effort on background (literature) study on complexity of projects in energy and chemicals industry could have been more helpful for the research by providing support to the inferences made in data analysis. Also, this could have helped in framing the research proposal and the process of research in a better way. Furthermore, the author thinks that the scope of the research could have been better-defined. Also, the author thinks, that the topic could have been more specific at the early stages itself, by choosing to explore and improve only a certain element such as culture or leadership or information flow (lean or agile) to improve overall success of project execution. In fact, there was a discussion in the month of January about it with company supervisor. But the author didn't display sufficient background work to pursue in those lines. If given a chance, the author would have conducted a set of exploratory group interviews within Fluor to obtain more clarity about the whole life span of project strategy, prior to the kick-off. Finally, the author should have been better equipped and prepared with skills of writing scientific reports. If provided with a chance, the author would have under taken courses on report writing and allocated more duration in learning the course of research methodology.

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APPENDIX A – INVITATION FOR INTERVIEW

Dear Project Managers,

This e-mail is regarding a research carried out at TU Delft in collaboration with Fluor on 'Best practices for effective project strategy implementation'. And this research can be accomplished only with your voluntary cooperation in a 30 minutes interview. Please respond before 26 April 2018 whether you are willing to participate. Further details are given below:

I am a master student at TU Delft, pursuing MSc. Construction management and engineering. Furthermore, now I am working at Fluor B.V. as a graduate research intern in PEM team.

My research focuses on 'best practices for effective project strategy implementation'. The goal of this research is: To provide recommendations on how to improve project strategy implementation. And this will be achieved by crafting a guideline based on best practices related to project strategy implementation. To establish the current practice, I will do interviews using the questionnaire provided in attachment.

There are 6 sections in the questionnaire. Section 1 is to understand the alignment of the respondent to the subject of questionnaire. Section 2-5 are meant to gain insights regarding formulation, communication, implementation and monitoring of the project strategy. Section 6 concentrates on general questions associated to the respondent.

Moreover, all the information retrieved from the questionnaire will be treated anonymously and will only be used for research purpose. Unless you want your name to be mentioned in the preface acknowledging the contribution of experts. The results of this questionnaire will provide guidance in exploration and selection of best practices regarding project strategy implementation. The findings of this research will be published in a report.

It will take you around 30 minutes to answer this questionnaire. The focus is on EPC project execution that include distributed execution.

Thank you in advance for your valuable feedback and cooperation,

Looking forward to your kind response,

Best Regards,

Sai Pranay Mukkala

APPENDIX B – INTERVIEW QUESTIONNAIRE

Interview Questionnaire

Personal Information of interviewee

Name:

Background:

Years of experience (Management | Engineering):

Any project management certified course done:

The title of my graduation thesis is **'Best practices for effective implementation of project strategy'**

This questionnaire will ultimately contribute towards answering the following research question: How can best practices improve project strategy implementation in an EPC company?

To begin with, definition of project strategy is stated as follows: Project strategy is a direction in a project that contributes to success of the project in its environment (Artto et al., 2008). Project strategy is composed of the following three parts: vision, target and plan. These three essential parts pave a path towards achievement of the highest competitive advantage and the best value from the project outcome (Patanakul & Shenhar, 2012).

Questions:

<u>Definition - Alignment:</u>

1. Do you agree with the **definition**?
    a. If not, what does project strategy mean to you?
    b. If yes, and do you still have any simpler definition for project strategy? Provide it!
2. Provide an example of project strategy in which you were involved either in its formulation or implementation.

<u>Formulation of project strategy:</u>

3. Do you often **formulate** project strategies in your projects? If yes,
    a. List the members who are involved in project strategy formulation?
    b. Do you follow any procedure (or practice) while formulating a strategy?
        i. If yes, which?
        ii. If no, do you think a guideline for effective strategy formulation would be a good idea?
    c. What are your usual expectations regarding a project strategy's effectiveness? (% successful)
    d. During formulation, how do you know that a project strategy is good to go ahead?
    e. Do you formulate an implementation scheme for strategy?
        i. If yes, list the members involved in formulation of this scheme.

<u>Roll out (or) communication of project strategy:</u>

4. How do you **communicate** the project strategy with the employees?

Also,

    a. Do your employees have problems understanding the strategy?
        i. If yes, how do you solve it?
    b. Do you translate (or communicate) the project strategy to lower levels of organisation?
        i. If yes, how do you do it?
        ii. If not, then who does it? Then, how does he/she do it?
    c. Do your employees have problems in accepting the strategy?
        i. If yes, what is the reason usually?
        ii. And what do you do to solve this problem?
    d. Are there any other challenges associated to communication of a project strategy?

Implementation of project strategy:

5. Were you confronted with ineffective **implementation** of project strategy? If yes,
    a. Who is accountable for implementation of project strategy?
    b. Do your employees have problems in effectively implementing the strategy? If yes,
        i. What are the main bottlenecks?
        ii. Are the bottlenecks documented or discussed in any form?
    c. Do you solve the bottlenecks? If yes,
        i. How do you solve the above-mentioned bottlenecks?
        ii. Who is involved in solving the bottlenecks?
    d. How do you document and communicate the adaptations/solutions to the bottlenecks?
    e. Do you follow any practice (or procedure) for strategy implementation?
        i. If not, do you think a guideline/roadmap is a good idea to support this process?

6. What is your (senior management) role in the following conditions:
    a. After communicating the project strategy to implementation team
    b. After sensing trouble/ineffective implementation of the communicated strategy

7. If you are handed with a project strategy that is already formulated:
    a. How do you know that a project strategy is good to be implemented?
    b. What are your usual expectations regarding its effectiveness? (% successful)
    c. Do you find it difficult to communicate the strategy to lower levels of organisation? And, how do you do it?

Monitoring the implementation:

8. Do you **track** the progress of your project strategy and its implementation? If yes,
    a. Do you do anything specific to monitor a strategy in addition to the standard project controls?
    b. Who is responsible for monitoring the progress of strategy and its implementation?
    c. Is the progress communicated periodically with teams responsible for implementation?
    d. Is the list of progress assessment indicators shared with implementation team?

General Question:

9. Have you faced the **consequences** of ineffective implementation of project strategy?
    a. What are the main (general) consequences of ineffective implementation?
    b. How do you evaluate team members on effective implementation and how do you give feedback?
    c. Do you incentivise your team upon effective strategy implementation?

10. On a scale of (1-5), to what extent do you **involve** in the following activities:
    a. Formulation of project strategy
    b. Formulation of implementation scheme of project strategy
    c. Communication/Translation of project strategy to immediate sub-ordinates and peers on same level
    d. Communication/Translation of project strategy to lower levels of organisation
    e. Tracking the progress of project strategy and its elements
    f. Feedback to the implementation/execution team

11. On a scale of (1-5), to what extent do your immediate sub-ordinate **involve** in the following activities:

a. Formulation of project strategy

b. Formulation of implementation scheme of project strategy

c. Communication/Translation of project strategy to immediate sub-ordinates and peers on same level

d. Communication/Translation of project strategy to lower levels of organisation

e. Tracking the progress of project strategy and its elements

f. Feedback to the implementation/execution team

APPENDIX C – INTERVIEW FINDINGS

This section forms the first step of the cross-case examination. The interviews are examined based on the ten different aspects influencing effective implementation of project strategy. However, in this sections tables for nine aspects are only shown. No relevant findings were recorded under an aspect, namely structure.

Table 12 Cross-case examination considering communication as the central aspect

Interview	Communication as aspect influencing implementation of project strategy
A	Understanding the project strategy is a concern within implementation teams
	Knowing what others don't understand is a challenge
	Project complexity makes understanding project strategy challenging
	Small amount of feedback is obtained from client about project strategy
B	Re-emphasise tactics and priorities through the project
	It takes time for sub-ordinates and implementation team to understand the strategy
	Open door policy to understand project strategy and also, to improve its cascading
	Distance acts as a challenge in communicating with global offices. Cultural difference is aggravated because of distance.
	No agenda - coffee breaks with counterparts in global offices is valuable (induces open mind and brings discussions)
	Workshare with global offices makes strategy fragmented and therefore, integration across sub-projects is challenging.
	Project managers should establish sufficient and clear chain of communication channels within teams and with external stakeholders.
C	If implementation teams don't take time to read project strategy, it impacts their understanding of project strategy
	Alignment of counterparts in other global office is challenging
	Communication between project management and lead level could be improved (more time could be allocated for communication).
D	It is more important to understand how to implement project strategy than to understand strategy itself.
E	The cascading process of project strategy is crucial. Revising them through the project should be done to keep it live.
	Clarity in prioritisation of drivers of project strategy is important for creating an understanding. (What do we optimise?)

	Vision of a project strategy must be better articulated to communicate it well. Provide clarity on the consequences of executing a project strategy in certain way.
	Language, accent and distance are bottlenecks in communication
	Dedicated communication personnel to broadcast progress of strategies are important
F	Gathering acceptance for a project strategy is challenging due to differences in experience, knowledge and interest within leader and members of teams.
	Cultural differences within project management team is another challenge in communication
	Communicating strategies to lower levels is challenging
G	Understanding new ways of execution by employees is difficult
	Alignment of teams is also a challenge

Table 13 Cross-case examination considering tools & methods as the central aspect

Interview	Tools & Methods as aspect influencing implementation of project strategy
A	Project director verifies if strategy is appropriately incorporated in the cascaded tactics before implementation.
	Implementation teams don't see the results of their work.
	Good change models are crucial
	The formulated project strategy must be project specific and new (complexity of project not included in strategy formulation procedures)
B	Identify the need of strategy to understand the reason behind formulation of a strategy
	Self-reflection and peer-reflection helps to shape a good strategy
	Implementation scheme for tactics (Project Execution Plan) is not formally present.
	Providing proper awareness on schedule upfront to various disciplines in each sub-project should be taken seriously by all project managers.
	Workshare with global offices makes strategy fragmentation and integration across sub-projects challenging.
C	Baseline procedures exist for strategy formulation and they don't exist for roll out and implementation.
D	Capture lessons learned from projects executed in similar location and client for formulating good project strategy
	Team reviews are performed, and all the experience is brought in during formulation of strategies

	Dynamics of projects could impact effective implementation of strategy; especially external stakeholders are outside the steer of influence.
	The detailed version of project strategy acts as a guideline or roadmap for implementation of project strategy
	It could be beneficial if distinctions are made between core, tactical and operational strategies.
E	Project strategy is constant, the implementation tactics and operations need to be amended upon requirement
	Before the implementation begins, the verification of incorporation of project strategy in the execution plans is challenging.
	Need for framework to design realistic vision and targets that are sufficiently challenging

Table 14 Cross-case examination considering resources as the central aspect

Interview	Resources as aspect influencing implementation of project strategy
A	Need to learn to implement new concepts and technical strategies in work
	Required skillset is different (present scenario)
C	It is challenging for execution team to deviate and be creative with implementation of new project strategies (skill)
	Skill assessment of team to involve right people for technical challenges boosted technical integrity and better implementation.
	Employees have difficulty to accept project strategy due to increased scheduled pressure
E	The skill of conflict resolution is important to be sensitive during implementation and to provide required attention to the dynamic problems that arise with strategy implementation.
	Better level of planning and realism is required as opposed to over optimistic approach
G	Introducing new people influences implementation

Table 15 Cross-case examination considering recognition as the central aspect

Interview	Recognition as aspect influencing implementation of project strategy
D	Individual reward plans exist but remotely linked to project strategy
E	Project specific recognition program are implemented in previous projects
G	Recognition programs are a part of the project

Table 16 Cross-case examination considering benefits as the central aspect

Interview	Benefit as aspect influencing implementation of project strategy
A	Money is not a great incentive
E	Bonus program and lateral promotions for excelling in projects are used as incentives
F	Once the project is successful, monetary incentives are provided

Table 17 Cross-case examination considering culture as the central aspect

Interview	Culture as aspect influencing implementation of project strategy
A	Lack of understanding about implications of project strategy (new)
	Stress level on teams is significantly high
	Good management of change is crucial
B	Strategy deployment is top-down but make sure one practices bottom up approach for formulation (create ownership)
C	Implementation teams should be involved in cascading of main project strategy in order to create ownership.
	Employees have difficulty to accept project strategy due to increased scheduled pressure.
	Inducing bottom up ownership and engaging sub-ordinates & implementation team in dialogue is important to involve Dutch employees.
	Implementation teams prefer working in certain ways, it is challenging to deviate and achieve goals.
D	Gaining acceptance for a project strategy is a challenge because people are experienced and have many opinions and also, due to Dutch cultural influence.
E	Vision of a project strategy must be better articulated to gain acceptance.
F	Gathering acceptance for a project strategy is challenging due to differences in experience, knowledge and interest within leader and members of teams.
G	Understanding and accommodating new ways of execution is a challenge
	Resistance to change acts as bottleneck for acceptance of new ways of execution

Table 18 Cross-case examination considering leadership as the central aspect

Interview	Leadership as aspect influencing implementation of project strategy
A	Delegation is a part of success formula
B	Project managers should be approachable
	Proper delegation crucial for success in implementation.

	Project managers should fragment the long-term project strategy into comprehendible and short-term tactics and keep sub-ordinates and various discipline leads on board.
	Project managers with good experience with project controls or with strong analytical skills could secure effective strategy implementation through proper forecasting.
E	The skill of conflict resolution is important to be sensitive during implementation and to provide required attention to the dynamic problems that arise with strategy implementation.
F	Project managers should efficiently coordinate with teams to fill the gap of technical knowledge. This is seen as a challenge.

Table 19 Cross-case examination considering decision as the central aspect

Interview	Decision as aspect influencing implementation of project strategy
B	Ownership in assessment of operations could be created by involving engineering managers and discipline leads in strategy formulation.

Table 20 Cross-case examination considering action as the central aspect

Interview	Action as aspect influencing implementation of project strategy
A	Implementation teams are involved in detailing of project strategy
	Lack of balance in Leads role of leading people and knowing what needs to be done
C	Deriving changes in execution work processes after understanding concept of new project strategy is challenging.
	Deviating from standard work processes is in conflict with audit, and not deviating is in conflict with project strategy goals
G	Understanding new ways of execution by employees is difficult

APPENDIX D – INTERVIEW EXCERPTS

For conducting data analysis, the responses from the interviews were transcribed. Based on the findings of the interviews, inferences were made to list down the issues that require attention. These issues are inferred on the basis of responses and comments received during the interviews. The comments are either pointing towards potential bottleneck that they face during implementation of a project strategy, or some suggestions that leaders and employees should practice based on their experience. Some of the comments used for deducing the issues are as follows:

Table 21 Comments on global office communication

Respondent	Comments
B	"The distance is a problem. We don't see each other, we don't know each other. Explaining and rolling out strategy on the other side is sometimes difficult. We must aware of that, but it remains as a challenge. The cultural difference acts like a bottleneck but then distance could solve that as well. So, on the priority list: distance and the cultural differences." "And that is very important bottleneck, they (other global office) change the strategy and impacts my strategy as well. And obviously then people have problems implementing the strategy. Because it doesn't match any more."
C	"Inter-office alignment is the bottleneck."
E	"Main bottlenecks that lead employees fail to effectively implement: language and accents, distance."
F	"Cultural differences within the project management team is another challenge in communication."

Table 22 Comments on shared understanding

Respondent	Comments
A	"Employees have problems understanding the strategy …" "… the challenge is, when you almost become blind to what part the others don't understand. Also, when you don't realise what others don't understand." "… moderate strategy utilised in a complex project with herculean details turns extremely complex."
B	"It takes time for others (implementation team) to understand the strategy (tactical) …"
C	"People don't take the time to read it. This the main problem behind lack of understanding by employees."
D	"… you cannot expect that everyone must understand why one strategy works and not the other one. It is more important that people understand how we implement the strategy. If people don't understand the strategy always, it is not a big problem. They should instead understand what they should do with it."
F	"Yes, people have problem understanding and accepting. Because there is difference in experience, knowledge and interest in the matter from leader to follower and within the teams."

	"I find it difficult to communicate strategies to lower levels of organisation …"
G	"If they don't understand, it is usually regarding new ways of execution."

Table 23 Comments on information flow

Respondent	Comments
B	"… re-emphasize tactics and priorities over the rest of the project" "I have an open-door policy. If you cannot accept the strategy, come …" "… other criterion of being successful and real execution such as negotiating with your team, negotiating with the vendors, all that was not in place. No real communication channels in place. No one knows whom to communicate to. People were aware of what to do, but nobody was aware of the schedule."
C	"… not enough time is spent on communication … communication between project management level to the lead level …"
E	"… have problems understanding the strategy, it is usually because of optimization vs sub-optimization. At project level, price optimization is the priority but at individual level it would appear like creating interface issue." "… the implementation of strategy is reviewed again and revised as we go ahead in the project and it is like a live document." "Some of the consequences of how to choose to execute it makes it more difficult … it is always like what do we optimise? Vision must be better articulated to solve such problems, to communicate to people."

Table 24 Comments on strategy-operation alignment

Respondent	Comments
A	"If we do have good management and change models, then strategies usually go fine." "They don't realise what they have done and impact of their work on implementation. They don't see the results of their work."
B	"No real communication channels in place. No one knows whom to communicate to. People were aware of what to do, but nobody was aware of the schedule … develop strategies that goes hand in hand with the schedule." "… importantly, always 'identify the needs' to answer the question."
D	"Sometimes strategy is formulated but doesn't work out later in the project. There are so many entities that are outside our steer of influence."
E	"… change in execution tactics and operations. You cannot change the project strategy, we have to live with it"

Table 25 Comments on knowledge upgrades

Respondent	Comments
A	"… change in percentage of workshare, required skillset has changed, need to learn to implement new concepts and technical strategies in their work"

C	"And it is their responsibility to understand and deviate from standard work process. And that's where … they usually struggle to deviate and be creative." "In one the projects, positive experience was the skill assessment of the team, in which strengths and weaknesses of a team were identified and repaired before starting to work. To see if they had right people for the technical challenge. It boosted the technical integrity and better implementation."
E	"Challenge is to listen to concerns and resolving conflicts … how do you balance between real concerns and just personal-organisational frustrations when asked to do something differently? Need to push people out of comfort zone."

Table 26 Comments on resource allocation

Respondent	Comments
C	"Projects are also under increased schedule pressure, people have difficulty to accept …"
E	"… much better level of planning and more realism."

Table 27 Comments on incentive scheme

Respondent	Comments
A	"Money is not a great incentive"
E	"Incentives are: recognition program, bonus program, promotions and different assignments"
F	"Incentives to teams are done through money, once the project is successful"

Table 28 Comments on bottom-up ownership

Respondent	Comments
A	"…. lack of understanding about what the implications are, a lot of employees don't take time to read the contract, so they don't know what the real commercial drivers are, they don't know the risks that Fluor has with respect to the execution model"
B	"… but make sure it is not top-down approach and is bottom-up approach. Then everybody knows where we are going to, they are involved as well"
C	"People don't take the time to read it… In Dutch culture, people need to believe it, only then they do it. Build up from the bottom and engage them in dialogue to involve the Dutch people. You need to demonstrate what you are thinking and planning to do or the Dutch won't involve..."
D	"Acceptance is a problem sometimes, mostly that happens in Amsterdam itself. People are experienced and have many opinions because of the Dutch cultural influence"
F	"… people have problems in accepting. Because there is difference in experience, knowledge and interest in the matter from leader to follower and within the teams"

Table 29 Comments on resistance to new strategies

Respondent	Comments
A	"Pressure on the people, stress levels on the teams now as compared to 30 years before is significantly higher. Getting the message across is tough and people don't realise the implications of new things"
C	"Projects are also under increased schedule pressure. People have difficulty to accept. They try to do their best, but they don't agree intrinsically" "Project engineers are responsible for the implementation part…. people are pre-programmed, and they are not creative with new ideas. They prefer working only in a certain way"
G	"Fear of change or resistance to change"

Table 30 Comments on leadership

Respondent	Comments
B	"I know where I would like to be two years from now. Since it is far away for others to comprehend. I tell people what they have to do for next 3 months. I pick up the strategy and cut it into pieces and that is how I try to implement the strategy as well. But also, to try keeping everybody on board. And that's what my predecessor missed"
F	"Project manager is not expert of technical knowledge, there is gap in some areas. Talk to responsible technical person and gain support to fill the gap"

Table 31 Comments on (re)definition of actions

Respondent	Comments
A	"The Lead must be way more knowing what they are doing and leading the team. There should be a balance between leading the people and knowing what needs to be done. And that is lacking, mix between hands-on and leading the people"
C	"People understand the concept. They don't understand the impact on their work process……and it is their responsibility to understand and deviate from standard work process. And that's where we…"
G	"If they are new ways they find it difficult in their existing ways of work, so it gets difficult"