ES3 Final Project
Scope SE & Co. KGaA

CASE STUDY

"HOW CAN SCOPE BEST UTILISE THE CRITICAL SUCCESS FACTORS OF SCOPE ONE TO GAIN MARKET SHARE?"

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Friday 4th January 2018
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Word Count: 17,042

Executive Summary

The case study assesses the question *'how can Scope best utilise the critical success factors of Scope One to gain market share?'*, by focusing on identifying and analysing the critical success factors of Scope One. A framework was devised from four project management theories and two agile software development theories to present 11 potential success factors for Scope One: *Defined Direction, Schedule, Organisation and Support, Personnel, Management Approach, Communication, Client Consideration, Risk Awareness and Avoidance, Technical, Delivery,* and *Performance Measurement*.

Seven questions consider the criticality of each factors based around the six theories in the framework, along with two other theories, a Scope One user survey and two separate interviews with the project manager and also a business analyst involved with Scope One.

The one major limitation of the study is the limited access to the market and external users of Scope One, partially due to the data privacy restrictions of the General Data Protection Regulation (GDPR).

As a result of the study, *Client Consideration* is found to be the most critical success factor, appearing as critical in response to six of the seven questions, followed by *Defined Direction* and *Schedule.*

The paper identifies three recommendations for the Scope One project, which addresses the limited external client and user involvement in the study. The first suggestion entails gaining greater insight into external user perceptions of project success in order to understand what clients consider as success factors and how the Scope One project can cater these success perceptions.

Secondly, gaining feedback from both internal and external users will continually provide the organisation with relevant feedback. This can be achieved by creating very short and periodic user satisfaction surveys; another idea is to highlight new features to users upon signing in and request feedback on it with a simple thumbs up/thumbs down option. This would ideally increase the amount of users providing feedback by generating quick and easy mechanisms to do so.

Finally, the criticisms from potential clients that decline the service provide interesting intelligence on the market's perception of the service and whether the company can facilitate individual needs. Moreover, by identifying the individual needs of potential clients and translating and integrating that into the Scope One service can contribute towards a competitive advantage.

The information received can aid with task prioritisation, altering the scope, maintaining quality, measuring performance and assessing risk. Expanding the detail and amount of responses received will offer new ideas and alternatives to consistently improve the service. Most importantly, it will assure that the client's expectations, requirements and opinions are kept at the forefront of the strategy and direction of the project.

List of Abbreviations

BRM	Benefits Realisation Management
CRA	Credit Rating Agency
CRA I	Regulation (EC) 1060/2009 European Union Law
CRA II	Regulation (EU) 512/2011 European Union Law
EBA	European Banking Authority
ECAF	Eurosystem Credit Assessment Framework
ECAI	External Credit Assessment Institution
ESMA	European Securities and Markets Authority
EU	European Union
EVM	Earned Value Management
GDPR	General Data Protection Regulation
IID	Incremental and Iterative Development
MIS	Moody's Investor Services
OECD	Organisation for Economic Cooperation and Development
PMBOK	Project Management Body of Knowledge
PMI	Project Management Institute
S&P	Standard and Poor's
The Big Three	Standard and Poor's, Moody's and Fitch
US	United States (of America)

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Introduction

A catalyst for change in the credit rating industry came in the wake of the financial crisis, triggered by the bubble of the US housing market bursting in the latter stages of 2007. This eruption spilled over to the European markets and catastrophically into sovereign debt the following year; the scars are still visible today, a decade later.

For much of the latter half of the 20th century, the industry was dominated by two issuer-paid agencies: Standard & Poor's Global Ratings (S&P) and Moody's Investor Services. The emergence and rapid growth of Fitch Ratings around the turn of the century saw the birth of an unrivalled American hegemony in the industry (Cash, 2013; Xia, 2013; Cash, 2017) and what is known today as the 'Big Three', described by some academics as an oligopoly (OECD, 2010; Becker & Milbourn, 2011; Bartels & Weder di Mauro, 2013). Not only that, it also showed that with an effective strategy the large actors can be challenged.

The crisis has been largely associated with the Big Three's tendency to inflate ratings (Becker & Milbourn, 2011; Xia, 2013; Bongaerts, 2014) igniting a call from politicians for more alternatives in the rating industry; in connection to this, three defined pieces of legislation were established in response to the crisis by the European Union (EU) that sought to constrain and regulate rating activities within its jurisdiction (Cash, 2017). Jean-Claude Juncker, President of the European Commission and Head of the Eurogroup at the time of speaking appealed "to set up our own European credit rating agency in Europe itself so that we have reliable and robust data from Europe itself for rating purposes" (German Bankers Association, 2011).

In the European market today, with 26 agencies registered with the European Markets and Securities Authority (ESMA), the organisation's market share calculation shows that collectively the Big Three hold 93.40% of the market share through rating activities and ancillary services (see Appendix 1); in contrast Scope Group holds 0.28% (ESMA, 2018).

Scope Group (SE & Co KGaA)

Scope is a German-based company that provides credit ratings, investor services, risk and fund analysis, and risk solutions, founded by Florian Schoeller in 2002. Scope Group comprises of four subsidiary companies, which have evolved over the course of the last 16 years: Scope Analysis GmbH, Scope Ratings GmbH, Scope Risk Solutions GmbH and Scope Investor Services GmbH (see Appendix 2).

With around 200 employees in offices established in seven locations across Europe, the company maintains a growing portfolio with a number of impressive mandated clients: Daimler, Santander, the European Investment Bank and the Lufthansa Group, to name a few. In addition, Scope acquired FERI EuroRating in 2016, and in doing so demonstrating a desire to be competitive, however the ambition of Mr Schoeller supersedes the strides that Scope has already taken. Two

years ago, Finanz Magazin interviewed Mr Schoeller; he stated that based on sales Scope aims to have ten per cent market share in ten years (Backhaus, 2016), although ESMA's reports show that in a year the company's market share has decreased by 0.18%, to 0.28% (ESMA, 2017; ESMA, 2018). The vision is to become the European alternative to the Big Three; there is a lot of ground to cover and various credentials that can accelerate this process.

While already a recognised External Credit Assessment Institution (ECAI) since 2013, the company is aiming for Eurosystem Credit Assessment Framework (ECAF) accreditation from the European Banking Authority (EBA), which can propel the visibility and credibility of Scope. Notably, only four other ECAIs also have ECAF accreditation: the Big Three and DBRS – another North American agency. The lingering question is, in the meantime and throughout the application period for ECAF accreditation, how can Scope close the gap between themselves and the Big Three?

Scope One

A particular strategy that has been under quiet development for the large part of two years is Scope One. Scope One is an investor-driven extranet: an online community that provides licensed institutional investors with access to Scope's products, services and networks. These services include an array of ratings research from Scope analysts, risk assessments and market forecasts in just a few clicks. In addition, the service has a disruptive remuneration model, registration is free of charge as well as public ratings and other valuable research, payment is only a requirement for certain client demands. With an emphasis on tailoring the depth of the service to individual customer needs, there is no double-charging for services – an unfortunate commonality in the industry – as well as sharing of scale effects with participants.

Scope One is a forward-thinking approach to customer service, as well as the long-term rewards of customer retention and customer loyalty. However, the platform is a double-edged sword; it is also an internal benefit as it is an intranet that can improve the efficiency of production and increase the demand. It provides insight into what the market demands, affords Scope the ability to approach issuers for ratings with the support of market demand for the rating and bulks up the pipeline for the analytical teams. The project predicts a lot of promise in equipping the company with the necessary tools to begin to compete against the Big Three.

Central and Sub-Questions

While Scope One has incredible potential, there are a number of factors that can limit the success of the service and achieving the strategic goals that the company are pursuing. Thus, the primary focus and central question of this paper is *'how can Scope best utilise the critical success factors of Scope One to gain market share?*'. In order to answer this question, there are a number of issues that must be clarified.

This paper will form a three-part structure, answering a total of seven sub-questions. Firstly, the paper will answer two questions that focus on defining critical success factors:

1. What is a critical success factor?
2. How do critical success factors tend to change over a project's life cycle?

Following this, the paper will look at the project development and management of Scope One:

3. What management styles and approaches have been used throughout the project?
4. What are the assumptions and constraints of the project?
5. What are the external influences on Scope One's success?

In the final section, the spectrum of success and failure will be discussed:

6. What factors can contribute to agile projects being considered a failure?
7. What are stakeholder perceptions of project success?

The following chapters will reveal in detail the theory and literature that have been included in this case study, with the methodology of the case study incorporating the scope and limitations of the paper. Each sub-question will then separately be answered and analysed in the results and analysis sections. The conclusion will then provide an answer to the central question: 'how can Scope best utilise the critical success factors of Scope One to gain market share?'. Recommendations for further research will be provided as well as potential future critical success factors that may arise in later periods of the product life cycle.

The scope of this case study has been narrowed specifically to the critical success factors of Scope One – a particular online service – and how these factors can be used to maximise competitive advantage and ultimately deliver an increase in market share. The focus, therefore, is not on the success of the project, neither the project management nor software development, but rather on the aspects that must be achieved in order to continue progressing. These factors are often dependent on others, linked by an intricate web of ideas, features and formalities. This will be explained in further detail in the following chapters. The field data collected for this case study is more qualitative and client feedback is limited as in this fast-moving industry collecting data from market participants is a difficult task. However, in order to gain a better understanding of the project and processes used the author participated in numerous internal meetings at Scope across a crucial six-month period of refining key features of the project in the lead up to its release; in addition the project manager and a business analyst working on the project were interviewed and a Scope One user survey was sent to Scope employees. Involvement in these meetings and interviews provided valuable insights into behavioural and organisational aspects to the project, notably the complexity of the project, the strategies and processes involved, the desired outcomes and the agile manner of working embraced at the company.

Theoretical Framework

In order to shed light on how Scope can gain market share, there must first be an analysis of the critical success factors of Scope One. The eight theories central to this case study derive primarily from project management theory as critical success factors are closely associated to this area, however agile software development theory, a specific sub-sector of project management theory, is also included due to the fact that Scope One is an agile project (Participant 1, personal communication, July 2nd, 2018).

This chapter will introduce the foundation of theory in this case study, which each present different scopes of the topic. The theory looks at critical success factors in project implementation, in relation to the project life cycle, in relation to success criteria and in agile software projects. The literature also assesses success perception looking at the differences in project management success and project success, plus different stakeholder success perceptions. In addition, the key principles of agile software development were included in the study to offer more input from a technical perspective in addition to the project management outlook of project success.

The theory is laid out chronologically beginning with the project management theories, followed by the agile software development theories. Subsequently, a framework was constructed for this study with six of the eight theories discussed in this chapter. It is important to note that while theoretically the framework is applicable to the Scope One project, it is crucial in the following chapters to assess its reliability and validity for the project in question.

Pinto & Slevin (1987)

Jeffrey Pinto and Dennis Slevin (1987) create an organisational research study about critical success factors in project implementation, whereby they assess a sample of 52 subjects predominantly employed at Fortune 1000 companies local to the University of Pittsburgh (US). The results of the study produces ten "factor definitions" (1987, p. 24); project mission, top management support, project schedule/plan, personnel, technical tasks, client consultation, client acceptance, communication, monitoring and feedback, and trouble-shooting.

Project Mission refers to having the goals of the project clearly defined and understood by both the project team and other departments in the organisation, as well as their alignment with organisational objectives.

Top Management Support encompasses not only the allocation of resources – whether they are financial, human or time-related – but also the belief in the project manager and team, especially in times of crisis.

Project Schedule/Plan entails the specification of schedules, milestones, manpower and equipment requirements, plus assessing performance metrics against time and budget allowances.

Personnel signifies the processes of recruitment, selection, training and developing a project team with the requisite skills and commitment to perform their function.

Technical Tasks indicates that there is both technological support, people that understand how it works and have the necessary skills for implementation to be effective.

Client Consultation in this paper connotes any user of the result of the project, meaning both external customers and internal departments, and whether their needs have been determined and met.

Client Acceptance closely correlates with *Client Consultation*; referred to by Pinto and Slevin as "the final stage in the implementation process, at which time the ultimate efficacy of the project is to be determined" (1987, p. 25).

Communication includes not only channels with customers and feedback mechanisms, but also internal communication between the project team and the rest of the organisation regarding project goals, changes in policies and procedures, and status reports.

Monitoring and Feedback reflects the progress of the project in relation to the schedule and budget, as well as personnel and system performance, and the ability to anticipate problems.

Trouble-shooting is the final factor definition, and effective mechanisms make it easier to react to problems as they arise and reduce risk when further issues lay on the horizon.

Pinto and Slevin created a framework around these ten factors as they are time sequenced and interdependent (see Appendix 3). It is important to remember that these factors are from an organisational perspective, strictly in the implementation process of a project; the same stage of the project life cycle that Scope One is extant.

Pinto & Prescott (1988)

The study was furthered by Jeffrey Pinto and John Prescott (1988) where the dominant factors of the ten factor definitions of project success are placed along the project life cycle. The study is carried out with 408 members of the Project Management Institute (US), of which 44% of the sample were construction project managers. Hypothetically, Pinto and Prescott suggest that *Project Mission* and *Client Consultation* are dominant in the conceptual phase; in the planning phase these two factor definitions are joined by *Top Management Support* and *Client Acceptance*; in the third phase, execution, the remaining six factor definitions are assigned along with *Client Consultation*; and in the final phase, termination, *Client Consultation* and *Client Acceptance* are the two dominant factors (see Appendix 4.1).

The results of the study are quite different (see Appendix 4.2). Although the conceptual phase is true to Pinto and Prescott's hypothesis, the study reveals that in the planning stage *Client Consultation* is not a dominant factor. In the execution phase, the dominant factors are *Project Mission, Trouble-shooting, Project Schedule/Plan, Technical Tasks* and *Client Consultation.* In the termination phase, the dominant factors are *Technical Tasks, Project Mission* and *Client Consultation.* Interestingly, three factors are not perceived as dominant factors in any of the stages of the project life cycle: *Personnel, Communication* and *Monitoring and Feedback.* In contrast, *project mission* features in all four of the stages.

The authors describe some important limitations of the study that must be considered and give possible reasons as to why the results appear this way. Pinto and Prescott suggest that members of project teams have grown within a project environment and are properly trained and qualified, thus the factor *Personnel* has become "the rule rather than the exception" in modern project management (1988, p. 16). In addition, the authors advocate that although *Communication* and *Monitoring and Feedback* are not exclusively dominant at any stages of the product life cycle in this study, due to the "multicollinearity between these factors and the eight other critical factors, it is impossible to gauge their relative contributions in predicting project success" (1988, p. 16).

Munns & Bjeirmi (1996)

Andrew Munns and Bassam Bjeirmi (1996) take a look at the role of project management in achieving project success, how they differ in measuring success and also where they overlap. In the paper, Munns and Bjeirmi suggest that project success has an orientation towards long-term goals, whereas project management is more concerned with shorter-term and a more specific context for success (1996, p. 82).

The authors use a six-stage project life cycle as opposed to the four-stage life cycle that Pinto and Prescott use, where the execution phase appears to be divided into three separate phases: production, handover, utilisation (see Appendix 5). Moreover, they propose that the scope of project management is only relevant during the planning, production and execution phases, whereas project success features all six stages, therefore the implication is that project management success is only a small subset of project success, thus it exists as a separate measurement alongside various other external factors to project success. It also implies that the project team are less concerned with the long-term objectives of the project as their primary focus is on the short-term project management objectives.

There is also the theory that the two overlap in areas due to three factors: time frame, confusion of objectives and ease of measurement. The confusion with time-frame arises from the fact that after the project management is completed, success can be derived from time, budget and quality measurements. So, success at this stage can only be judged from the project management criteria as the long-term goals are unlikely to have been realised by this time. Moreover, objectives of each are often related but not correlated, which can cause a misunderstanding. For example, take financial objectives into account; cost and budget are project management issues, whereas profitability is a project objective – these can often be entangled. In a similar way, project management objectives are easier to measure as they are quantitative and short-term; budget and schedule, however project objectives are more difficult as they are often qualitative and long-term (1996, p. 84).

Munns and Bjeirmi state that project success can be assessed through only three criteria; project implementation – referring to the project management techniques used in three phases of the scope of project management success in the life cycle, perceived value by users during the utilisation phase and client satisfaction at the termination of the project, where all influences and the original goals can be considered.

Cooke-Davies (2002)

In a paper entitled 'The 'real' success factors on projects', Terry Cooke-Davies (2002) evaluated detailed analysis on 136 (mainly European) projects between 1994 and 2000 by 23 different organisations. In this paper, Cooke-Davies divides 12 identifiable factors into three categories; project management success, project success and corporate success.

Project management success is divided into two sub-categories of factors relating to on-time performance and within-budget performance. According to Cooke-Davies, the practices that correlate to on-time performance are:

> *F1 Adequacy of company-wide education on the concepts of risk management.*
> *F2 Maturity of an organisation's processes for assigning ownership of risks.*
> *F3 Adequacy with which a visible risk register is maintained.*
> *F4 Adequacy of an up-to-date risk management plan.*
> *F5 Adequacy of documentation of organisational responsibilities on the project.*
> *F6 Keep project (or project stage duration) as far below 3 years as possible (1 year is better).*
> *On the other hand, those that correlate to on-cost performance are:*
> *F7 Allow changes to scope only through a mature scope change control process.*
> *F8 Maintain the integrity of the performance measurement baseline.*
> (2002, p. 186)

Project success in this paper is attributed to one sole factor surrounding the benefits delivery and management processes between project management and line management functions (2002, p. 188).

The final three factors are categorised under corporate success. One is portfolio and programme management practices that match with the corporate strategy and business objectives. Another is project, programme and portfolio metrics that provide feedback on current performance and forecasts. The remaining one is that there is the continuous improvement of project management processes and project personnel (2002, p. 188-189).

Intriguingly, the author writes a small section on the omission of 'people' as a factor, and that where the first eight factors are derived from 'hard' data, the four remaining factors originate from 'softer' evidence. Thus, the people aspect doesn't necessarily fit in to one of these categories, rather that the integral role of people in each factor means they play a central role in success.

Westerveld (2003)

Egbert Westerveld (2003) proposes a project management model based on the EFQM business model that was named 'The Project Excellence Model' (see Appendix 6.1). The paper links success criteria and critical success factors, as it is important to clarify that although closely related and a contributing factor to project success, they demand different outcomes. Westerveld suggests that the results areas of the project can be attributed to success criteria, whereas the organisational areas can be recognised with critical success factors (2003, p. 412).

Through a literature review specific to project success criteria, Westerveld identifies six success criteria – or results areas in the Project Excellence Model. The first is the *Project Results* in relation to the traditional project management 'golden triangle' of goals: time, budget and scope. The following five all relate to satisfaction of stakeholder groups involved in the project; so, *Client Appreciation* is how the client values the project outcome in fulfilling their needs. *Appreciation by Project Personnel* concerns reaching personal goals and a good working atmosphere on the project. *Appreciation by Users* is measured by their overall influence in the project as well as the primary concern of the functionality of the product. *Appreciation by Contracting Partners* and *Appreciation by Stakeholders* are both similar cases to those of project personnel in that they are focused on personal gain and individually profiting from the opportunities the project bring. *Appreciation by Stakeholders* is a broad category as it incorporates "parties that are not directly involved in the project but have a large influence…. These parties manage their specific interests" (Westerveld, 2003, p. 414).

The same was done for the literature that Westerveld analyses on critical success factors in projects, and six organisational areas are allocated. *Leadership and Team* represents the project management styles and approaches used, how tasks and responsibilities are divided and the cooperation from team members in this system. *Policy and Strategy* concerns the project goals and the steps taken to achieve them, which also includes *Stakeholder Management* to a degree, as stakeholder engagement in the project has a profound effect on determining the projects place in its environment. In the following area, R*esources,* efficient and effective resource management aids providing maximum benefit to stakeholders. *Contracting* is another area as partnerships can carry weight with image and reputational views as well as competency. The *Project Management* aspect of Westerveld's model includes scheduling, budgeting, organisation, quality, information and risks (2003, p. 415).

An additional noteworthy aspect of Westerveld's study is the five project types he has identified (see Appendix 6.2). This case study will focus mainly on type IV, strategy orientation, and type V, total project management, although it should be noted that there are properties of the other project types that are applicable to the Scope One project – this will be analysed later in the paper. These two project types in particular are the more complex in nature and are the two most relatable types to the project.

Davis (2014)

Success can be perceived differently, as highlighted by Munns and Bjeirmi (1996) with their differentiation between project management success and project success. Kate Davis (2014) looks at project success perception from different stakeholder groups according to 708 pieces of literature, analysed which factors each stakeholders valued the most, as well as which stakeholders had mutual success factor perceptions.

The study firstly identifies seven stakeholders grouped into four parties and nine main success factor themes (see Appendix 7.1). The groups are as follows; project manager, project team, client and user form a party, and sponsor, owner and executive are categorised together too. The recommendations of the paper suggest that three stakeholder groups are sufficient: senior management, project core team and project recipient (Davis, 2014, p. 199). The nine themes are *Communication, Time, Mission, Stakeholder Satisfaction, Acceptance, Cost, Project Manager, Benefit Delivery* and *Top Management Support.*

According to the literature, the main theme is *Communication*, common in five stakeholder groups: project manager, client, owner, user and project team. The next highest in significance is *Time,* mutual between project manager, client, sponsor and user. *Mission* is identified as a critical factor by project manager, project team and executive. *Stakeholder Satisfaction* is relevant to project manager, client and user. *Acceptance* relates to client, user and project team, and *Cost* to project manager, client and user. *Project Manager* and *Benefit Delivery* are dual-shared themes, unsurprisingly with project manager and also sponsor. Finally, *Top Management Support* is a theme in conjunction with project manager and executive (Davis, 2014, p. 197).

In the comparison of stakeholder group success factors (see Appendix 7.2) the client and user share all five success factors in common. The project manager shares four with each and three with the sponsor. The comparison will be key in determining the perception of the success factors of Scope One.

The Agile Manifesto (2001)

One of the theories that will be combined with project management theory in this case study is the twelve principles of agile software development noted in *The Manifesto for Agile Software Development*, also known as *The Agile Manifesto*. These principles are formed by 17 senior individuals in the software development and programming cadre, naming the symbolic cooperation as the 'Agile Alliance'. The manifesto highlights four central values and 12 principles to agile software development.

The purpose of the manifesto is described by the signatories:

> *We are uncovering better ways of developing software by doing it and helping others do it. We value:*
> - *Individuals and interactions over processes and tools.*
> - *Working software over comprehensive documentation.*
> - *Customer collaboration over contract negotiation.*
> - *Responding to change over following a plan.*
>
> (Beck, Beedle, van Bennekum, Cockburn, Cunningham & Fowler, 2001)

The principles are comparable and also contrastable with project management theory (see the full list of principles in the manifesto in Appendix 8). They are not explicitly success factors, nevertheless they are principles through which success factors can be derived. In summary, they read as follows: satisfy the customer; welcome change; deliver working software frequently; business and development must work together; individuals must have the environment and support necessary; face-to-face communication; working software is the primary measure of progress; agile processes promote sustainable development; pay attention to technical excellence and good design; simplicity; self-organising teams; regular team evaluation (Beck, et al., 2001).

The Agile Manifesto provides valuable insight into the orientation purpose of agile processes, which is instrumental to the scope of the case study and allows for more dynamic analysis of critical success factors in the Scope One project.

Chow & Cao (2008)

Tsun Chow and Dac-Buu Cao (2008) collect survey data from 109 agile projects from 25 countries across the world to assess the critical success factors in agile software projects. The study first identifies four attributes of overall perceived success in agile software development projects: quality, scope, time and cost. From agile software development literature, the authors identify 19 causes of failure and 36 success elements (see Appendix 9) that are consolidated into 12 factors. These 12 factors are then hypothesised in relation to the four attributes of perceived success, creating 48 hypotheses. The full list of elements of success and failure will be essential to assessing the spectrum of success and failure in this project.

Of the 12 factors, three are organisational and three are project factors, there are two each attributed to people factors, process factors and technical factors. The organisational three are *Management Commitment, Organisational Environment* and *Team Environment*. The project factors are *Project Nature, Project Type* and *Project Schedule*. The people factors are *Team Capability* and *Customer Involvement*; the process factors are *Project Management Process* and *Project Definition Process*; as for the technical factors, they are *Agile Software Techniques* and *Delivery Strategy*.

The results of the survey study reveal that while there were six important success factors, only three of them are recognised as critical. The three important factors to overall success, according to the survey, are *Project Management Process, Team Environment* and *Customer Involvement*. The three critical factors to success that the study produces are *Delivery Strategy, Agile Software Techniques* and *Team Capability*. The authors explicitly draw attention to the relation the factors have with the principles of the Agile Manifesto, in particular the three critical factors as suggested by the study (Chow & Cao, 2008, p. 986). Comparisons between the theories will follow this chapter in further detail.

Case Study Framework

Theory Justification

The framework comprises of six of the literature discussed in this chapter, excluding only Pinto and Prescott (1988) and Davis (2014). The exclusion of Pinto and Prescott (1988) is purposeful, as it focuses on success applied to the project life cycle. This theory is integral to answering the second sub-question: *'how do critical success factors tend to change over a project life cycle?'*. Moreover, it uses the same theory of critical success factors as presented by Pinto and Slevin (1987).

Similarly, the exclusion of Davis' (2014) study is reflective of the perspective it relays on the final sub-question of the study: *'what factors can contribute to projects being considered a failure?'*. These two theories will aid in shaping the frame of reference and create depth to the framework, pursuant of the task of identifying the critical success factors of Scope One.

Thus, the framework is constructed with the works of Pinto and Slevin (1987); Munns and Bjeirmi (1996); Beck, et al. (2001); Cooke-Davis (2002); Westerveld (2003); and Chow and Cao (2008). The key findings of these works are placed side by side, with four of them having twelve central points that vary in description (see Appendix 10). The theories were selected for their unique perspectives on success and therefore success factors.

The work of Pinto and Slevin (1987) on critical success factors in project implementation is fundamental to project management theory and more so critical success factor theory, as frequently cited by scholars. According to Davis' study, "results reveal that Pinto was the most cited author with 87 citations linked to the assessment of project success" (2014, p. 191). It is one of the first substantial pieces of literature on the topic and has been cited in four of the five other project management theories in this chapter (Pinto & Prescott, 1988; Cooke-Davies, 2002; Westerveld, 2003; Davis, 2014) – it is the backbone of this theoretical framework.

Secondly, Munns and Bjeirmi (1996) not only provide a valid case for the need to segregate perceptions of project management success and project success; they also highlight three areas critical to success. The scope of the paper adds a unique insight into project success and success factors with regard to short-term and long-term perceptions.

Cooke-Davis (2002) goes one further, assessing success factors from three different dimensions: project management success, project success and corporate success. This adds more depth to the definition of success factors and success perception.

The Project Excellence Model, developed by Westerveld (2003), links success criteria and critical success factors. The model provides more dynamics to the framework, based on the distinction of organisational areas and results areas, where there is interrelation between the factors despite the boundaries in responsibility.

The Agile Manifesto from Beck, et al. (2001) are the guiding principles of agile software development and interestingly the principles align strongly with project management theory on

success factors. It offers crucial insight into success factors in that field and necessary input from the technical realm of the project. The manifesto is the first of two agile inputs in the framework.

The second is from Chow and Cao (2008). The study identifies 12 factors, however the results of the study produces six prominent factors. The framework will account for the original twelve, however the study's stemming emphasis on half on them will be a curious attachment to the framework and the case study. The data collection from the paper is diverse and provides a well-rounded view of success factors in agile projects. It consolidates the framework in combination with project management theory, and overall the theories appear to support each other.

Factor Definitions

The analysis of the theories produced 11 factor definitions, covering 59 of the 61 factors in the six pieces of literature (see *Figure 1*). Each theme is supported by at least three of the theories and none of them are unanimously supported. The factors definitions being assessed in this study are: *Defined Direction, Schedule, Organisation and Support, Personnel, Management Approach, Communication, Client Consideration, Risk Awareness and Avoidance, Technical, Delivery,* and *Performance Measurement*.

1. Defined Direction

The project mission, goals, planning and strategy all fall into this theme. The direction encompasses the expression 'how to get from A to B' as well as deciphering what A and B stand for.

2. Schedule

The schedule not only adheres to time management, but also planning the project in respect to both time and money constraints. The schedule is interlinked with the direction of the project; setting deadlines for progression and it defines the occurrence of the transitions through the stages of the project life.

3. Organisation and Support

This theme marks the vital role of top management, the working environment, and how the project team is organised and cooperate within smaller units. It is also one of three themes that is common in five of the six theories in the framework.

4. Personnel

People are the cogs of any project; this theme incorporates both their individual and collective capability, as well as sparsely talked about dynamics to their involvement, such as work ethic, commitment to the company and the project, and personal goals.

5. Management Approach

The project manager is a central influential figure of both project management success and project success. The theme comprehends all ten knowledge areas of project management: integration management, project scope management, time management, cost management, quality

management, resource management, project communications management, risk management, procurement management and stakeholder management. In addition, it includes agile processes, sustainable development, incremental and iterative development management, benefit realisation management (BRM) and earned value management (EVM).

6. Communication

Communication is a unique factor as it shares an interconnected relationship with all other factors, as highlighted in Pinto and Slevin's framework (see Appendix 3). It entails the effectiveness of the channels of communication, methods of communication as well as intercultural communication.

7. Client Consideration

The client is often the main benefactor of the product of projects, giving their opinion great value. In this case study the client is the users of Scope One, so both internal and external clients apply Consideration includes consultation, involvement, acceptance and satisfaction. It is the second of the three most common themes in the literature of the framework.

8. Risk Awareness and Avoidance

Trouble-shooting is a cost- and time-effective method of risk assessment and management. The theme is a focal point for the project manager, however it is important that all project team members are aware of identifying and avoiding risks. The phrase 'you are only as strong as your weakest link' coins the sentiment well – it is important that there is risk management on risk management.

9. Technical

Scope One is fundamentally a software development project, therefore success weighs heavily on the technical aspect of the project. The theme includes security, scalability and compliance with legal requirements. Unsurprisingly, it is a key feature of each of the agile theories.

10. Delivery

The theme not only consists of project implementation; benefit realisation management is also a key feature of the delivery and ties closely with the marketing strategy.

11. Performance Measurement

The last of the three most common themes in the literature, performance measurement includes metrics, team reflection, personal evaluation of team members and feedback on client satisfaction and value perception. Another key aspect of the theme is the project's success in relation to the 'golden triangle' of project management theory: time, cost and scope, also referred to as earned value management.

Figure 1 – Project Management Theory and Agile Software Development Theory Framework

	Factor Definitions	Project Implementation	Project Management & Project Success	Project Management, Project Success & Corporate Success	Success Criteria & Critical Success Factors	Agile Software Development	Agile Software Projects
		Pinto & Slevin (1987)	**Munns & Bjeirmi (1996)**	**Cooke-Davies (2002)**	**Westerveld (2003)**	**Agile Software Manifesto (2001)**	**Chow & Cao (2008)**
1	**Defined Direction**	Project mission					Project definition process
							Project nature
							Project type
2	**Schedule**	Project schedule/plan		Keep project under 3 years			Project schedule
3	**Organisation & Support**	Top management support		Documentation of organisational responsibilities	Leadership and team	Self-organising teams	Management commitment
					Policy and strategy	Business & developers must work together	Organisational environment
					Project management		
4	**Personnel**	Personnel			Leadership and team	Environment & support	Team capability
							Team environment
5	**Management Approach**			Portfolio and programme management practices	Stakeholder management	Agile processes	Project management process
				Benefits delivery and management process	Project management	Sustainable development	Agile software techniques
					Resources		
6	**Communication**	Communication		Assigning ownership of risks	Project management	Face-to-face conversation	
7	**Client Consideration**	Client consulation	Client satisfaction		Appreciation by client	Satisfy the customer	Customer involvement
		Client acceptance			Appreciation by users		
8	**Risk Awareness and Avoidance**	Trouble-shooting		Risk management education	Project management	Simplicity	
				Up-to-date risk management plan			
				Maintenance of visible risk register			
9	**Technical**	Technical tasks				Technical excellence and good design	Agile software techniques
10	**Delivery**		Project implementation			Deliver working software frequently	Delivery strategy
				Metrics, feedback on current performance and forecasts	Project results	Team reflection on effectiveness	
					Appreciation by contracting partners	Working software primary measure of progress	
				Integrity of performance measurement baseline	Appreciation by stakeholders		
11	**Performance Measurement**	Monitoring and feedback	Perceived value by users				

Methodology

Data Collection

The research methods of this study collected data from preliminary desk research on critical success factors, qualitative data in the form of two interviews and quantitative data from an internal user survey.

Preliminary Desk Research

The initial stage of data collection through desk research showed that 'critical success factors' frequent project management literature, however as displayed by the literature there are many different dimensions to 'success' in projects. The research strategy was then focused on identifying the different scopes of project management theory with regard to critical success. Works on incremental and iterative development in project management theory introduced the concept of agile processes to the research.

In this case study there are eight central sources in total, six of which are project management theory and two are agile software development theory. Four of the project management theories along with the agile theories are compared in the framework (see *Figure 1*). Pinto and Slevin (1987), Munns and Bjeirmi (1996), Beck, et al. (2001), Cooke-Davis (2002), Westerveld (2003) and Chow and Cao (2008) are the six pieces of literature that feature in the framework, all different in perspective creating a narrower scope of the definition of critical success factors in this case study, and of this particular project. The framework was crucial to answering the central question of this study: *'how can Scope utilise the critical success factors of Scope One to gain market share?'*. In addition, the framework was instrumental in answering the first sub-questions: *'what is a critical success factor?'* as well as playing a minor role in answering the sixth: *'what factors can contribute to agile projects being considered a failure?'*. The literature used in the framework is reliable on the basis that the results of the individual studies are viewed interpretively in order to apply to this project. Moreover, throughout the research process of wider reading in areas of study, various different papers cited many of the sources included in the framework, implying their reliability. For example, according to Davis' study on stakeholder success perception, during the data analysis "results reveal that Pinto was the most cited author with 87 citations linked to the assessment of project success" (2014, p. 191). Interestingly, many of the sources published later cite the earlier works used in the framework, however this can lead to conformity of information and indifference of opinions.

Davis' (2014) study on stakeholder success perception is an important influence in answering the final sub question *'what are stakeholder perceptions of success?'* in unity with the results of the user survey. This source is the most recently published of the eight main theories used, inferring that it is dependable with the assumption that access to information and research methods have improved over time.

Pinto and Prescott's (1988) adaptation of Pinto and Slevin's (1987) work researches the changes on critical success factors across the product life cycle. This was influential in providing an answer to the second sub-question *'how do critical success factors tend to change over the product life cycle?'*. The study produces a hypothesis before the results and the outcomes differ significantly (see Appendix 4); another important consideration in this study. The creation of the hypothesis and result comparison portrays a certain thoroughness of the research.

Finally, field research from Scope has also been considered in the study as well as internal company sources of data accessed over a six-month period between February and July 2018.

User Survey

A five-question survey was constructed for internal Scope One users (see Appendix 16). Responses were collected from Scope employees to gain an insight on user's opinions of the project. The data was gathered from a total of 62 employees at Scope during November 2018. Below is a table with the five questions in the survey, the relation of the question to the theory and its relevance.

Focusing on the final three questions of the five, the third question *'generally, do you support the project?'* is focused on obtaining data about the general opinion of the users. One drawback is the generality of the question, splitting it into two or three questions may have delivered more detailed opinions beneficial to the study.

The fourth question asks to prioritise six factors in terms of the importance to Scope One's development until its publication. The six factors are used based on the results of Pinto and Prescott's (1988) study on critical success factors in the project life cycle (see Appendix 4.2). During the first three phases of that model *Project Mission, Client Consultation/Acceptance, Top Management Support, Trouble-shooting, Schedule/Plan* and *Technical Tasks* feature. In the survey: *Defined Direction, Schedule, Organisation and Support, Management Approach, Client Consideration* and *Risk Awareness and Avoidance.* The only differences are between *Technical Tasks* and *Management Approach*. This is arguably justified due to the fundamental role technical tasks play in a software development project. In contrast, a central feature of critical success factor theory is the project manager, therefore the management approach is a significant factor in the development of the project.

In contrast, the fifth question asks about six different factors in terms of importance to Scope One's long-term success. The six factors in this question are *Defined Direction, Client Consideration, Risk Awareness and Avoidance, Technical, Delivery* and *Performance Measurement*. These factors were selected through logical reasoning of the 11 factors in the case study framework (see *Theoretical Framework: Case Study Framework* and *Figure 1*).

Below is a table containing each survey question, its relation to the theory and its relevance to the case study (see *Figure 2*).

Figure 2 – User Survey Questions, Relation, Relevance

	Question	Relation to Theory	Relevance/Question
1	What department do you work in?	Identify stakeholder group (Davis, 2014)	Internal Scope One users range from top management to the project team and other Scope employees
2	Have you used Scope One?	-	Identify valid responses
3	Generally, do you support the project?	-	User perception / Q7
4	Rank these factors in terms of importance to Scope One's development until its publication.	CSF change in product life cycle (Pinto & Prescott, 1988)	More in depth analysis of Pinto & Prescott theory / Q2
5	Rank these factors in terms of importance to Scope One's long-term success	CSF change in product life cycle (Pinto & Prescott, 1988), Success perception (Davis 2014)	User success perception of Scope One / Q2, Q7

Interview 1

Two semi-structured interviews were carried out with two key members of the project team. An interview with the project manager of Scope One (hereafter, Participant 1) conducted on 2nd July 2018 comprised of 15 questions. These questions focus primarily on schedule, planning, organisation and achieving the goals of the project. During this interview, the participant referred to using "agile working processes" and an "agile working environment" throughout the project management (Participant 1, personal communication, July 2nd, 2018), which correlates with preliminary research findings and inspired a deeper look into the processes used.

Interview 1 is unsurprisingly valuable in answering the two questions focused on project development and management: *'what are the assumptions and constraints of the project'* and *'what management styles and approaches have been used throughout the project?'*. It also plays a large role in the fifth sub-question *'what are the external influences on Scope One's success?'* and offers some input on the final question 'what are stakeholder perceptions of project success?'. The full transcript of the interview is attached to the *Appendices* (see Appendix 17).

Figure 3 is a table containing each interview question, its relation to the theory and its relevance to the case study.

Figure 3 – Interview 1 Questions, Relation, Relevance

	Question	Relation to Theory	Relevance/Question
1	Can you explain what your role in the project is?	-	Deeper comprehension
2	At what stage in the project were you brought on board?	CSF change in product life cycle (Pinto & Prescott, 1988)	Perspective of timeline
3	Has the outcome changed since you joined the project? Or has the strategy to get there changed at all?	Framework	*Defined Direction* / Q3, Q4

4	Has the launch date changed much? Has the timeline from start to finish changed either?	Agile processes (Beck, et al. 2001; Chow & Cao, 2008), Framework	*Schedule, Management Approach* / Q4
5	Can you reveal the initial reactions of the board and the shareholders on Scope One?	Stakeholder perception (Davis, 2014), Framework	*Organisation & Support, Defined Direction* / Q7
6	Were there any crucial steps in the planning or development that you feel were not given enough attention, or other steps that were given too much?	Agile processes (Beck, et al. 2001), Framework	*Schedule, Management Approach* / Q3
7	Can you tell me how initial market research was done and how extensive it was?	Framework	*Client* Consideration / Q3
8	As there are other similar products that exist, for example, Fitch Connect, did you realise this before the project began?	-	Q3, Q4, Q5
9	Why was the project internally revealed late into development and how do you think this has affected the development?	Agile processes, work together, deliver software (Beck, et al. 2001), Framework	*Client Consideration, Management Approach, Communication, Performance* Measurement / Q4, Q5, Q7
10	What is the forecasting of the future of Scope One?	Framework	*Schedule, Client Consideration*
11	Do you think mistakes will be easier to identify now that you have the foundation of the modules, and you regenerate that for the different modules?	Agile environment (Beck, et al. 2001; Chow & Cao, 2008), Framework	*Client Consideration, Risk Awareness & Avoidance / Q3*
12	Were there any grey areas or regulatory barriers that affected the progression of the development?	-	Q3, Q5
13	As the credit rating industry is well-known to be an oligarchy dominated by the Big Three, some scholars are suggesting that the only way to change this is through regulatory changes. What are your thoughts on that?	Framework	*Defined Direction, Management* Approach / Q3, Q5
14	While ESMA 'encourages' issuers to choose a second rating from an agency with less than 10% market share, it is not a legal requirement. Do you think this is a help or a hindrance to the company and its reputation?	Framework	*Client* Consideration / Q3, Q5
15	In what ways other than its geography do you feel Scope is an alternative to the Big Three? And do you think it will be enough in the end to challenge their dominance?	Perceived value by users (Munns & Bjeirmi, 1996), Framework	*Defined Direction, Client Consideration, Delivery* / Q5, Q7

Interview 2

Subsequently, a second 12-question interview with a business analyst in the Scope One team (hereafter, Participant 2) took place on 4th July 2018, which gave more valuable insight into the processes being used, assumptions and constraints of the project. This led to the affirmation of the inclusion of agile software development literature in the framework.

Interview 2 is also valuable in answering the same two questions focused on project development and management along with Interview 1: *'what are the assumptions and constraints of the project'* and *'what management styles and approaches have been used throughout the project?*'. The transcript is attached to the *Appendices* (see Appendix 18).

Below is a table containing each interview question, its relation to the theory and its relevance to the case study (see *Figure 4*). Question four has 'N/A' in both columns as the interviewee did not have an answer for this question.

Figure 4 – Interview 2 Questions, Relation, Relevance

	Question	Relation to Theory	Relevance/Question
1	Can you explain what your role in the project is?	-	Deeper comprehension
2	At what stage in the project were you brought on board?	CSF change in product life cycle (Pinto & Prescott, 1988)	Perspective of timeline
3	Can you explain a little bit about the planning, processes and strategy of developing the platform?	Agile processes (Beck, et al. 2001; Chow & Cao, 2008), Framework	*Organisation & Support, Management Approach, Client Consideration, Risk Awareness & Avoidance, Technical, Performance Measurement* / Q3, Q4
4	Are you familiar with any IT processes that may have aided the development of Scope One or that can help the service maintenance?	N/A	N/A
5	Was Scope One built from scratch or was it built around an existing model? Was inspiration drawn from any other sources for features or functionalities?	Agile processes, working together (Beck, et al. 2001; Chow & Cao, 2008), Framework	*Management Approach, Client Consideration, Technical* / Q3, Q4
6	What was the focal point of the IT side: functionality, usability, reliability, performance, security, supportability? Was there high product focus or service focus during the development?	Agile processes (Beck, et al. 2001; Chow & Cao, 2008), Framework	*Management Approach, Performance Measurement* / Q3, Q4
7	During the building of Scope One were systems development and service management integrated or dealt with separately? Do you think this will/should continue?	Agile processes, working together (Beck, et al. 2001; Chow & Cao, 2008), Framework	*Organisation & Support, Management Approach, Client Consideration* / Q4
8	Do you think there are sufficient or insufficient resources for a project of this magnitude?	Framework	*Schedule, Organisation & Support, Personnel, Management Approach, Technical* / Q3, Q4

9	With so many variables, what do you think some of the biggest obstacles to overcome were?	Risk management education (Cooke-Davies, 2002), Framework	*Schedule, Organisation & Support, Personnel, Management Approach, Technical* / Q3, Q4
10	Can you give some insight on how ideas were managed and the decision-making process behind whether to immediately incorporate them or develop them later? How were priorities and expectations managed?	Agile processes, satisfy customer (Beck, et al. 2001; Chow & Cao, 2008), Framework	*Schedule, Organisation & Support, Management Approach, Technical* / Q3, Q4
11	From your professional opinion, is there anything that you would do differently?	Working together, team reflection (Beck, et al. 2001), Framework	*Organisation & Support, Performance Measurement* / Q3, Q4
12	From a technical perspective, what is the largest barrier to the success of the platform? What future challenges can be foreseen at this stage, if any?	Risk management education (Cooke-Davies, 2002), Working together (Beck, et al. 2001), Framework	*Schedule, Organisation & Support, Personnel, Management Approach, Client Consideration, Risk Awareness & Avoidance, Performance Measurement* / Q3, Q4

Data Analysis

This case study presents the results and analysis as one merged chapter in the following chapter. It was configured that analysis of the questions in its entirety delivers superior clarity for the reader, and allows for clearer definition between answers as they are interlinked.

The data analysis process began by comparing the project management literature and the agile software development literature, resulting in the case study theoretical framework (see Appendix 10). Discovered through the preliminary research process, the interesting input on critical success factors and the project life cycle from Pinto and Prescott (1988) presented fair considerations. The fact that the project is already into the advanced stages of the project life cycle is an important element in this study when considering the validity of the success factors of the framework. While past critical success factors in the project life cycle are insightful, the focus of this case study is on present and future critical success factors.

Moreover, the nuances in success perception detailed particularly by Davis (2014) and other authors encouraged an analysis of success perception for each stakeholder, how they compare and how they differ. This information is another acute characteristic of the scope of this study as it allows for a cross checking of factors that are shared of each party.

With all these points considered, the facts of the project are laid out in the ensuing *Case Study* chapter, where the framework was applied and analysed with to mitigate the validity of the success factors of Scope One. A resulting *Discussion* section simultaneously analyses the reliability of the framework and the data provided, taking place through careful evaluation with the two interviews and survey. Concluding that chapter, answers to the seven sub-questions outlined in the *Introduction* are provided.

Limitations

One key limitation is the restricted access to market participants due to the nature of the credit rating industry. Information in the industry is highly confidential and it is regulated in Europe by three pieces of EU law: Regulation (EC) 1060/2009 (CRA I), Regulation (EU) 512/2011 (CRA II) and Regulation (EU) 462/2013, an amendment of CRA I. These three regulations have detailed boundaries and procedures, as well as the privacy restrictions of confidentiality, including Regulation (EU) 2016/679, commonly known as the General Data Protection Regulation (GDPR) that came into effect on 25th May 2018. This obstructs the researcher from carrying out independent field research of the company's target market for Scope One. Input from the market was collected by Scope, which was considered in the research, however an autonomous study with market participants may have provided more specific insight on the client/user's critical success perception.

In addition, the survey questions may have revealed better insight into user perception, which is also invaluable information that contribute towards risk, delivery, technical issues and performance measurement. In particular the third question concerning general support for the project. With more targeted questions rather than the umbrella question, better insight may have been collected. In addition to this, the exclusion of 'Schedule' as a factor in contention, the correlation between the results of the research in the case study does not fully connect the dots on this point. A perspective from the survey may have provided much more clarity on Scope One user's perceptions of this factor and its importance. Much like Pinto and Prescott (1988), the factors for Question 5 of the survey were hypothesised before the study was composed, to which the result has turned out differently. A wiser choice of responses would have been as followed: Defined Direction, Client Consideration, Communication, Schedule, Organisation and Support, and Performance Measurement, in correlation with the findings of Davis' (2014) study.

One final limitation is the unavailability of the answer to question four of the second interview. An answer may have provided some other valid points to consider with the agile software development processes used in constructing Scope One.

Case Study

The central question of this case study is *'how can Scope utilise the critical success factors of Scope One to gain market share?'*. In order to reach an answer to this question it is crucial that the critical success factors are defined, the project development and management of Scope One is reviewed, and the spectrum of success and failure is measured. These themes are decisive factors in determining the scope of the case study, furthermore they present more acute and more accurate results to the central question.

As mentioned in the preceding section, this chapter simultaneously presents the findings and the analysis of the research pursuant to the following seven sub-questions:

1. What is a critical success factor?
2. How do critical success factors tend to change over a project's life cycle?
3. What management styles and approaches have been used throughout the project?
4. What are the assumptions and constraints of the project?
5. What are the external influences on Scope One's success?
6. What factors can contribute to agile projects being considered a failure?
7. What are stakeholder perceptions of project success?

The sub-questions are interlinked with each other, so greater clarity of the stages of narrowing the scope and displaying how differing conclusions are derived at numerous intervals provides the reader the opportunity to digest relevant information to the case study. This method aids greatly in reaching more independent and conclusive answers to each of the sub-questions, and ultimately the central research question.

1. What is a critical success factor?

The term *'critical success factor'* is accredited as first being developed by John F. Rockart in 1979, but the definition was advanced together with Christine V. Bullen in their paper that followed two years later. Rockart and Bullen define critical success factors as:

> *"….the limited number of areas in which satisfactory results will ensure successful competitive performance for the individual, department, or organization. CSF's are the few key areas where 'things must go right' for the business to flourish…."* (1981, p. 85).

The definition of success in this case study in relation to this description will focus exclusively on ensuring successful competitive performance for the organisation, with the ultimate strategic objective of acquiring market share in the credit ratings industry.

The evolution of project management theory has had a profound influence on the broad range of what 'success' means, also highlighted by the literature in this case study. As discussed in the *Theoretical Framework* chapter, Munns and Bjeirmi (1996) write about two overlapping areas of success in project success and project management success. Project management success is often measured long before project success by analysing performance in conjugation with the time, budget, scope and quality boundaries (Munns & Bjeirmi, 1996, p. 84). Cooke-Davies (2002) includes another realm of success, adding corporate success to project success and project management success. Each perspective analyses different scopes of success and therefore naturally the success factors to these definitions also differ. Not only is it crucial to consider the nuances between the *what, who* is an additionally important dynamic to deliberate. Davis (2014) expands the viewpoint from just a project and company focus of success to include the perception of project success from various stakeholder groups. This paper will focus on project success and internal stakeholder success perceptions.

In the Case Study Framework, 11 critical success factors were identified consistently in the pieces of literature that are relevant to the Scope One project (see *Theoretical Framework: Case Study Framework* and *Figure 1*). *Defined Direction, Schedule, Organisation and Support, Personnel, Communication, Client Consideration, Management Approach, Risk Awareness and Avoidance, Technical, Delivery* and *Performance Measurement* are all derived from the six pieces of literature that make up the framework. The factors listed are the critical success factors that will be assessed in this case study, however there are many variables that apply to the Scope One project and can contribute towards a more acute answer.

2. How do critical success factors tend to change over a project's life cycle?

The first formality is to identify the stages of the project's life cycle. Outlined in the study by Pinto and Prescott (1988), critical success factor variation across the stages of the project life cycle are important to consider in this case study (see Appendix 4). In these models, there are four stages of the project's life cycle highlighted; conceptualisation, planning, execution and termination, taken from works by Adams and Brandt (1978), and King and Cleland (1983). Contrastingly, Munns and Bjeirmi (1996) create a six-phase cycle that effectively expand Pinto and Prescott's execution stage into three separate stages (see Appendix 5). The six stages in this cycle are conception, planning, production, handover, utilisation and termination. The research revealed that more recent literature on project life cycles tend to adopt the modern editions (post-2004) of the Project Management Body of Knowledge (PMBOK) project life cycle, consisting of five phases: initiating, planning, execution, performance/monitoring and closing (see Appendix 11) (PMI, 2013).

Scope One is an iterative and incremental development project, meaning that production will continue throughout the latter stages of the project life cycle – this will be discussed more during the ensuing section. As a result of this approach, the stages of the project life cycle overlap with the development of each module and only the first external module has been published. In the Scope One project, the handover phase plays a more continuous role due to the improvement of features throughout production, handover and utilisation. This unique approach blurs the lines of where one process ends and another begins (Participant 1, personal communication, July 2nd, 2018), and also where one stage of the life cycle ends and another begins.

The project has 3 identifiable project life cycles that vary in terms of time: feature development life cycle, module production life cycle and the entire Scope One project lifecycle. A more rigid structure is better applicable for developing individual modules – the feature and module life cycles stages have a more finite beginning and end, however the overall project life cycle is more blurred as it is interwoven with recurring feature development and module production life cycles (see Appendix 12 and Appendix 13). The Scope One project life cycle arguably has seven phases that also continually overlap with the development of each module: conception, planning, production, handover, utilisation, monitoring and controlling and eventually termination. Understanding the project life cycle and each stage is pivotal to analysing the influence of each success factor at various stages.

Highlighted in the *Theoretical Framework*, Pinto and Prescott's (1988) study display that the project mission is a prominent and dominant factor, also the sole factor that features across all four stages of the life cycle (see Appendix 4.2) (Pinto & Prescott, 1988, p. 15). Moreover, three factors do not feature as dominant factors in any of the four stages: personnel, communication, and monitoring and feedback (Pinto & Prescott, 1988, pp. 15-16). The stages of the project life cycle in this study that are relevant to the case study are the two latter stages, as the Scope One project as a whole has advanced from the conception and planning phases. In the execution phase, the

dominant factors are project mission, trouble-shooting, project schedule/plan, technical tasks and client consultation (Pinto & Prescott, 1988, p. 15). In the termination phase, the dominant factors are technical tasks, project mission and client consultation (Pinto & Prescott, 1988, p. 15).

Further suggestion that critical success factors change over the project life cycle can be found in the survey results (see Appendix 14.3 and Appendix 14.4). *Defined Direction* and *Client Consideration* are viewed by users to change in terms of importance across different stages. *Defined Direction* is seen as the most important of the six factors listed during Scope One's development, followed by *Client Consideration*. However, interestingly *Client Consideration* becomes more important in the long-term according to survey respondents.

Not only is the change in importance an interesting observation, but also the percentages of change involved. 61.29% of respondents voted that *Defined Direction* was most important to short-term success in comparison to 22.58% or respondents selecting *Client Consideration*. In the following question regarding importance in terms of long-term success, 45.16% selected *Client Consideration* as most important and 41.94% selected *Defined Direction*. The difference in opinion clearly shows that in terms of long-term success, the factors are much more equal in importance in contrast to the much larger divide in terms of short-term importance.

With Scope One unquestionably past the planning stage of the project life cycle, it can be argued that four of the 11 factors can be ruled out as critical success factors. According to the study by Pinto and Prescott (1988), *Organisation and Support* is a critical success factor during the planning stage (see Appendix 4.2), therefore due to the fact that the project has advanced into a more advanced stage in the life cycle, this factor is not critical at this stage. In addition, in the model created by Pinto and Slevin (1987), three factors are not critical at any stage (see Appendix 3). Although *Personnel, Communication* and *Performance Measurement* are deemed as failure factors in agile projects (Chow & Cao, 2008), Pinto and Prescott explain, "given the multicollinearity between these factors and the other critical factors, it is impossible to gauge their relative contributions in contributions to project success" (1988, p.16). Cooke-Davis (2002) states that "it is fast becoming accepted wisdom that it is people who deliver projects, not processes and systems… Thus the 'people' side of the success factors is woven into their very fabric" (2002, p. 189). Due to the constant interconnectivity throughout the project, these factors are not considered as 'critical' to the project's success at this stage.

In contrast, Pinto and Prescott (1987) suggest that at this stage *Defined Direction, Schedule, Client Consideration, Technical,* and *Risk Avoidance and Awareness* are all factors that should be considered as critical at this stage of the Scope One project, as supported by the results of their study. A deeper look into the remaining sub-questions of this case study will provide more insight as to whether the result of that study is completely true of the Scope One project.

3. What management styles and approaches have been used throughout the project?

The project management and also the software development approach fundamental throughout the project is agile methods (Participant 1, personal communication, July 2nd, 2018), similarly known as incremental and iterative development (IID). Incremental development is described by Dr. Alistair Cockburn as "a staging and scheduling strategy in which various parts of the system are developed at different times or rates and integrated as they are completed", briefly meaning "to add onto" (2008, p. 27). Cockburn also defines iterative development as "a rework scheduling strategy in which time is set aside to revise and improve parts of the system", or "to re-do" (2008, p. 27).

These methods are repeatedly described and confirmed by the interviewees, where Participant 1 mentions an "agile working process" and "agile working environment" as well as constructing a modular system and "trying to be as flexible as possible" (Participant 1, personal communication, July 2nd, 2018); similarly, Participant 2 refers to a "multi-step refinement process" when developing features of the software (Participant 2, personal communication, July 4th, 2018). This type of working environment is a more effective and efficient use of time and resources as it allows for the service to be launched long before it is a completely finished product. The advantage of working in this manner is that there is the possibility to generate external feedback from external users in the market while it is functional, therefore the project team can gather valuable guidance concerning the specific needs and requirements of the users. Ultimately, this benefits the development of the software, as the refinement of the service is more efficient with the knowledge of what the clients actually seek to gain from using the service. Munns and Bjeirmi affirm, "the client is responsible for early decision-making and therefore has an important role in determining success" (1996, p. 83). In this way, it contributes towards better task prioritisation and time management of the project. This also has an effect on the cost and quality of the project.

The fourth principle of the Agile Manifesto states that "business people and developers work together daily throughout the project" (Beck, et al., 2001), also echoed by both Participant 1 and Participant 2 (Participant 1, personal communication, July 2nd, 2018) (Participant 2, personal communication, July 4th, 2018). The multi-step refinement process involves close collaboration from both business teams and software development teams through ten identifiable phases, entailing four review phases: idea conception, 'user story' development, initial software development trouble shooting, 'user story' review, production/coding, quality assurance, bi-weekly release, review, and show and tell (Participant 2, personal communication, July 4th, 2018) (see Appendix 13). The inclusion of reviews at multiple stages shows that both risk control and performance are being frequently measured throughout production.

Another principle of the manifesto states, "delivering working software frequently is essential to agile projects, from a couple of weeks to a couple of months, with a preference for the shorter timescale" (Beck, et al., 2001). Time is one of the four central focuses of project

management success according to Munns and Bjeirmi, alongside cost, scope and quality (1996, p. 82). Both interviews reveal that these factors are no less true of the Scope One project, noting that distance and speed were particularly central to the initial software development (Participant 1, personal communication, July 2nd, 2018) (Participant 2, personal communication, July 4th, 2018). "while agile development is similar to Rapid Application Development in terms of speed and flexibility, there's a big difference when it comes to technical cleanliness. Agile approaches emphasize quality of design, because design quality is essential to maintaining agility" (Beck, et al., 2001). The focus was on basic functionality rather than creating "the perfect solution" (Participant 1, personal communication, July 2nd, 2018), which also provides explanation the bi-weekly deadlines set for feature development. In this way, production avoids becoming side-tracked by the persistently developing ideas of features – the pipeline must maintain structure and priority in order for the approach to be effective.

Other aspects deeply linked to making timely progress are noteworthy additions, such as the interconnectivity, interdependence and importance of the foundation of the software on existing and future modules, as well as selective inclusion of personnel at different stages of development for their professional feedback (Participant 1, personal communication, July 2nd, 2018) (Participant 2, personal communication, July 4th, 2018). Feedback is another recurring theme that is dominant to the approach; also a key standalone feature of Westerveld's (2003) Project Excellence Model (see Appendix 6.1). The project strategically collects feedback from various stakeholders at different stages of the life cycle to gain more valuable information on what is required from the project and to prioritise organisational tasks more easily (Participant 1, personal communication, July 2nd, 2018), as is also presented in the model. The strength of the foundation is critical to any form of construction and its longevity, as is the inclusion of the groups and individuals that decisions will affect.

One other observation of Westerveld's model is the five project types that he created that the model applies to (see Appendix 6.2). The Scope One project would fall mainly under project type IV – Strategy Orientation – where the key to success is flexibility and adapting to the demands of external parties is the effective coping mechanism. Interestingly, the "critical control aspects" for this project type are time, money, quality, risks and organisation (Westerveld, 2003). However, the project types either side, III and V – System Orientation and Total Project Management – also have points that are applicable and integrated into the Scope One approach. For example, with System Orientation, organisationally, the quality of the work processes is key to the project, as reading the environment is a key to success. With Total Project Management, organisationally it can be argued that Scope One has relied heavily on cooperative decisions and execution, it incorporates long-term solutions and innovative methods. Moreover, the project sees the company cooperate and participate with external parties as well as adapting, and information is arguably

one of the most critical control aspects. Scope One is a hybrid of these three types, based on Strategy Orientation and with heavier influence from Total Project Management.

The intrinsic impact of the agile approach, the technicality of the project as it is a software development project, and measuring performance simultaneously with risk at frequent intervals along with constant monitoring throughout the project provides some insight on their criticality. The factors *Performance Measurement, Technical,* and *Risk Awareness and Avoidance* are factors that are consistently important factors along the life cycle of the project, however it is difficult to perceive them as critical at any point. In addition, *Management Approach* and *Organisation and Support* are factors that were once critical during the planning phase, however the success of the approach this far reduces their importance, and their critical aspect has expired. *Delivery* is a factor that also bears importance, but with the heavy impetus on *Client Consideration*, it is reasonable to assume that by producing a valuable service for clients based on their continual guiding feedback, the delivery of the service is less of an issue.

Defined Direction is a constant concern to success as straying from the goal can be costly in both a horological and a monetary sense, however the structure of production considers this along with client views. One observation of the approach is that it prioritises *Defined Direction, Schedule* and *Client Consideration* as factors that must be accounted for at all times; at this stage they are critical to the success of the project.

4. What are the assumptions and constraints of the project?

In the previous section, the advantages of working with agile methods were touched upon. In this section the disadvantages – in connection with the expectations – of these methods will be talked about. The central assumption and constraint of the project relating closely to many of the points in this section is cooperation and understanding between the business teams and development teams.

The project is heavily dependent on cooperation between the business operational management of the company and the software development team (Participant 1, personal communication, July 2nd, 2018). Participant 2 divulged that the differing perspectives and having an understanding of both sides of the project development was an important part of the process, however that was lacking in areas (Participant 2, personal communication, July 4th, 2018). Moreover, as previously mentioned, the interdependency of the modules on the early stages of development meant that ensuring the solidity of the foundation and recurring features is important not only for the longevity of the service, but also the forthcoming scalability (Participant 1, personal communication, July 2nd, 2018) (Participant 2, personal communication, July 4th, 2018). Werner Vogels, Chief Technology Officer at Amazon, explains that scalability "requires applications and platforms to be designed with scaling in mind, such that adding resources actually results in improving the performance or that if redundancy is introduced the system performance is not adversely affected." (2006).

The methods and agile approach to the project also meant that stages in the processes often overlapped (Participant 1, personal communication, July 2nd, 2018). The intricate nature of the development process and the length of the development pipeline also became a frustration for the demand of the business side (Participant 2, personal communication, July 4th, 2018); Participant 2 reveals that a framework was created for the development side that must be worked within, including the boundaries set by the skillset of the team and the possibilities with the resources (Participant 2, personal communication, July 4th, 2018). Markovitch and Willmott state: "it is important that the team has the skills needed to build the required technology components in a modular way so that they can be reused across processes, maximizing economies of scale" (2014, p. 4). This can also be translated to the business side in the future; as the service improves efficiency of business transactions with customers, the capacity of the business team to deliver the products in the pipeline will similarly not be instantaneous due partly to the processes involved (Participant 2, personal communication, July 4th, 2018). Perhaps better communication in this area may have improved the management of expectations, as well as the overall understanding of the project from the various teams involved.

Alternative aspects to this are the influx of ideas being generated as other teams are steadily included in the development processes and their ideas are integrated into the pipeline. It is a question of prioritising features and re-ordering the pipeline in correspondence with the executive

decisions made (Participant 2, personal communication, July 4th, 2018). As mentioned, there is an initial focus on the basic working functionality rather than creating a perfect solution, attention to details can be revised while the service is operational (Participant 1, personal communication, July 2nd, 2018); a fundamental concept of agile methods. Participant 2 adds that the service focus is more dominant during the primary development stages, and with inclusion of the necessary business minds there will be heavier emphasis on the product offering (personal communication, July 4th, 2018). The relevance of different groups at different stages of the project fluctuates, not only for efficient purposes but also from a practical perspective (see Appendix 11).

Another interesting point is that support from the development team during the early stages of the handover phase (see Appendix 5), has been factored in until the business side has the necessary infrastructure in place (Participant 2, personal communication, July 4th, 2018). One other repetitive topic of the second interview was balance. Balance in terms of time, cost, scope and quality, but additionally balancing the pipeline, the expectations of various parties and balancing the maintenance, improvement and future development of Scope One (Participant 2, personal communication, July 4th, 2018). Recurring themes of thought are time, cost and quality, as is evident through this paper, however managing the expectations of groups is also key to effective cooperation.

Although communication between teams and the understanding between them, as well as understand the processes involved when applying agile methods is a factor that can be improved, it has not significantly hindered the project. The technical side has been fluid and has an enduring role throughout the project. Moreover, the preconceived attention towards the handover of the modules suggests that the *Delivery* is not a critical factor; the success of the project is not necessarily dependent on this factor, and arguably it is a very minor fragment of the project with all things considered.

The focus of the client is once again evident and attention to the direction is emphasised. The assumptions and constraints of the projects tend to link to the schedule, and maintaining progression and momentum. These points are important to the cost and quality dimensions of the project too, and continually balancing them is crucial. This balance is altered by internal factors that can be managed, but collectively with external factors that are out of the control of the company and project team.

5. What are the external influences on Scope One's success?

A SWOT analysis – strengths, weaknesses, opportunities and threats – for the service, Scope One, is a strategic planning technique that briefly highlights the internal and external factors. The utility in this study is that by focusing on the opportunities and threats of Scope One, external influences are can be categorised into three main points: the nature of the market, the legal environment and technological threats (see Appendix 15).

The most overshadowing threat is the characteristics of the credit ratings industry. The oligopolistic market structure and system of self-regulation – within loose boundaries set by regulators – is one explanation towards how the market has evolved until this point (Participant 1, personal communication, July 2nd, 2018). The Big Three collectively have a 93.40% market share in Europe and the remaining 24 agencies operating in Europe have a combined market share of 6.60% (ESMA, 2018). This emphasises the scale of the power and influence of the Big Three in the market, combined with their financial capability. This suggests that replicating a similar service would be less of a financial burden on the other two agencies, however it would still be a time-dependent matter. Moreover, according to Adamson, Dixon and Toman, "the new environment favours creative and adaptable sellers who challenge customers with disruptive insights into their business—and offer unexpected solutions" (2013), supporting a flexible narrative and prioritising client satisfaction.

Becker states, "Fitch used to be much smaller, but over the past decade has become a peer of S&P and Moody's" (2009); with the emergence of Fitch and its successful challenge to the oligopoly around the turn of the century, attempts since then have been more stagnant. The Big Three are issuer-paid agencies, so alternatives in the form of investor-paid agencies have attempted to break-through, however the selling power of the Big Three has maintained their reign. It is important to keep in mind that Scope One is an investor-driven service, while the agency operates under a hybrid model whereby both issuers and investors pay (Scope, 2018). The fact that Scope is a relatively early market entrant with Scope One presents an opportunity to gain some exposure and pursue their mission of providing and maintaining the '*the* European alternative' selling point. The market is continually evolving and new requirements are being demanded (Participant 1, personal communication, July 2nd, 2018), not only from market participants, but "credit rating agencies have been heavily criticized by investors, politicians, and the general public" (Morkoetter, Stebler & Westerfeld, 2017, p. 235). Jean-Claude Juncker called "to set up our own European credit rating agency in Europe itself so that we have reliable and robust data from Europe itself for rating purposes" (German Bankers Association, 2011). In addition, the market that Scope One operates in is a stable, and growing niche market. With much uncertainty concerning how Brexit will affect various industries, according to Ramiah, Pham and Moosa, "it is a threat to financial services as Britain will lose its 'passport rights', which allow British-based institutions to sell in the rest of European Union without having a physical location in other countries" (2016, p.

4); it is projected to have expensive consequences – however, Scope One bypasses this. The introduction of new regulations may well alter the business environment and despite movement in the market, change until now has been slow.

Legal requirements are another threat to the service. The rapid growth of the internet and technology means that regulations are only starting to catch up. Regulations take time to be devised and agreed on, especially considering varying political climates in each European country and ever-changing agendas. Supranational policy-making is a time-consuming process; the new European Union GDPR that came into effect in May 2018 is the latest update of the last European data protection directive from 1998, which was amended in 2003 (European Commission, 2018). That marks a 15-year gap between action on European data protection laws. Although regulation affects all market participants, there are currently few players in the specific market of secure online credit rating services. Furthermore, ESMA has a non-binding recommendation to mandate a credit rating agency with less than 10% market share (ESMA, 2018), and while Scope is in that category it is beneficial (Participant 1, personal communication, July 2nd, 2018), however long-term, it may have implications. Becker suggests, "regulatory discipline might be valuable going forward, and may require having a fair number of ratings firms" (2009).

A final and integral aspect to the project is the very real risk of a cyber-attack. Although security mechanisms are in place to counter these specific risk, "in the wake of digitalisation are the repeated stock market 'flash crashes' witnessed in recent years, appearing out of thin air and passing as quickly as they arise, as well as cybercrime" (Tolo, 2016, p. 6). Even with the necessary provisions and protection in place to decrease the effects of a flash crash and the risk of cybercrime, it is still a possibility, as it is the "second in the top ten business risks worldwide" (Parlour, 2018). Despite the risk from a technical point of view, as displayed in Wiboonrat's process group interaction across the life cycle, the monitoring and controlling process group is present throughout the life cycle, and at no point does it become critical (see Appendix 11).

The nature of the risk presented in this question is technical, including security risks, of which countering measures have been coded into the fundamental elements of the software development. Therefore, it can be disputed that *Risk Awareness and Avoidance* is not a critical factor at this stage.

In contrast, the industry is crying out for differentiation, and providing an alternative to the market with the guidance of current and prospective clients displays a level of client integration into the strategy that makes it difficult to ignore throughout the project life cycle.

6. What factors can contribute to agile projects being considered a failure?

Although this case study is considering the success factors of the project, it is equally beneficial to assess the failure factors in order to gain a rounded view of success. Chow and Cao's (2008) study provides 19 factors across four dimensions (see Appendix 9.1).

The six organisational factors are lack of executive sponsorship, lack of management experience, organisational culture too traditional, organisational culture too political, organisation size too large and lack of agile logistical arrangements (Chow & Cao, 2008). Dissecting the dimension, executive sponsorship has been visibly excellent with Florian Schoeller taking the project under his wing and keeping a close eye on its progression from the early days of planning. Not only that, but the project gained early support from the Executive Board, Supervisory Board and also major shareholders in the company (Participant 1, personal communication, July 2nd, 2018). Although the project manager is inexperienced in the field of project management, the surrounding support and experience of executive management in the ratings industry as well as the heavy involvement and collaboration from the Head of IT at the company has created a strong management dynamic for the project. There is no doubt that the organisation culture is either too traditional, too political or too large. The two-tiered board structure is evidence of more modern rather than traditional executive management styles, there is no evidence of a strong political culture within the organisation, moreover there are around 200 employees, which does not suggest that it is too large. Likewise, the agile logistical arrangements can be supported by the fact that the organisational structure has changed minorly multiple times since the beginning of the project, an indication that the company is not afraid to reshuffle in order to find a suitable solution. Beck, et al. advocate: "agile processes harness change for the customer's competitive advantage." (2001). Organisationally, the project does not show signs of weakness, in fact more of a resilience in its adaptability.

In the dimension of people there are five factors: lack of necessary skill-set, lack of project management competence, lack of team work, resistance from groups or individuals and bad customer relationships (Chow & Cao, 2008). Participant 2 explicitly mentioned that the project worked within the skill-set of the team, who are qualified and experienced software engineers (Participant 2, personal communication, July 4th, 2018). As previously stated, the relative inexperience of the project manager in project management is offset by the support network and experience of management in their associated fields of expertise. Despite the minor friction between the business teams and development teams with regard to their understanding of the needs and requirements of the other, it is exaggerated to describe the relationship as lacking in team work, rather a slight flaw in communication. The team work throughout the project has been described by both interview participants, furthermore the progress of the project would not be on schedule without the efficiency of teams collaborating. In the same way, resistance from groups or individuals has been in the form of minor disagreements or suggesting points of improvement; as

the survey results show, 87.10% of respondents generally support the project (see Appendix 14.2). Lastly, as for bad customer relationships, the whole concept of the project would collapse if that were the case as it relies entirely on customers using and interacting on the platform. The agile manifesto reads, “build projects around motivated individuals, give them the environment and support they need and trust them to get the job done” (Beck, et al., 2001).

The dimension with the most factors is process: ill-defined project scope, ill-defined project requirements, ill-defined project planning, lack of agile process tracking mechanism, lack of customer presence and ill-defined customer role (Chow & Cao, 2008). The scope and requirements have been well defined during the planning process of the project, which has also not been altered, with the exception of minor adaptations to cater for the GDPR, for example. The process tracking mechanisms are visible on the company’s intranet, where processes are documented and tracked, as well as weekly update calls between team managers. The paper has detailed the role of the customers and their presence throughout the stages of the project. According to the agile manifesto, “the volatility associated with today's projects demands that customer value be re-evaluated frequently, and meeting original project plans may not have much bearing on a project's ultimate success” (Beck, et al., 2001).

The technical dimension contains the last two factors: lack of complete set of correct agile processes and inappropriateness of technology and tools (Chow & Cao, 2008). The interviews have displayed a clear demonstration of both iterative and incremental development techniques, as well as the development process and life cycle (see Appendix 12 and Appendix 13). The research of this case study has not looked at the technology or tools used in this project, therefore a justified conclusion cannot be reached on this factor.

With the data collected in assessing the failure factors, the strong management support and organisational structure suggests that *Organisation and Support* is not a critical factor. Continuing, *Personnel* provides a strong argument of stability as does Management Approach; with regard to being a critical factor at this stage of the project, there does not appear to be any cause for concern. Technically, the project is strong in the case of the technical processes there is no critical aspect to it, but as for technology and tools there is room for more research. In addition, the continual role *Technical* aspects play, it can be argued that its importance is continuously vital, but not critical to success, however success can be perceived differently from different stakeholder groups, so the measurement of success can vary.

7. What are stakeholder perceptions of project success?

One influential theme of the case study is perception; this case study has already looked at the *what* and the *when* aspects to narrow the scope of perception. Another fragment of success perception is *who*, as the results will differ depending on the stakeholder group in question. This case study will solely consider internal success perceptions.

Davis' (2014) study shows that different stakeholder groups have different perceptions of success (see Appendix 7.1). The results show that according to the study, the client and the user share success perceptions (see Appendix 7.2), which is interesting because the definition of clients and users overlap in relation to the project, but are not exclusive; clients are external, users are both internal and external, however not all clients are users, likewise not all users are clients. This chapter will continue to assess the user perception, as client perception is external.

According to the study, there are eight critical success factors in the eyes of the project manager: cooperation/collaboration/consultation/communication, time, identifying/agreeing objectives/mission, stakeholder satisfaction (quality), cost/budget, project manager competencies and focus, delivering strategic benefits, and finally, top management support/executive commitment (Davis, 2014).

The executive perception of success only entails identifying/agreeing objectives/mission and top management support/executive commitment (Davis, 2014).

The perception of users is concerned with five critical success factors: cooperation/collaboration/consultation/communication, time, stakeholder satisfaction (quality), making use of the finished product/acceptance, and cost/budget (Davis, 2014).

The project team perception has three critical success factors: cooperation/collaboration/ consultation/communication, identifying/agreeing objectives/mission and make use of the finished product/acceptance (Davis, 2014).

The project manager and users have four success factors in common, the next highest amount from the study (Davis, 2014), implying that of the stakeholder groups they share the most similar perceptions of success. On the other hand, the two groups collectively have four factors that are not in common – three from the project manager and one from the user (Davis, 2014). The project team shares two different pairs of factors with both the project manager and user perceptions (Davis, 2014). Although the executive perception is entirely shared by the project manager, one factor is shared with the project team and none are shared by the user (Davis, 2014), which demonstrates how far removed executive success perception and user success perceptions appear in the study.

The feedback received by Scope from stakeholder groups suggests generally positive perceptions, and feedback has been a recurring feature of the development (Participant 1, personal communication, July 2nd, 2018) and the results of the survey concur with 87.10% of respondents generally supporting the project (see Appendix 14.2). Feedback was gathered at various stages of

development; shareholder and executive feedback was collected during the conception, external client/user perceptions were collected during conception, and internal user perceptions were collected during planning and after the service became operational (Participant 1, personal communication, July 2nd, 2018). There was a soft launch for selective clients to offer a market perspective on functionality, usability, reliability, performance, security and supportability, aiding the refinement of the development (Participant 1, personal communication, July 2nd, 2018). This emphasises the fact that input from clients is an important strategy in developing the project, as well as a key principle of using agile methods.

Applying the study from Davis (2014) to the 11 factors identified in the Case Study Framework, there are four factors in particular from the study that demand more attention. The first is cooperation/collaboration/consultation/communication, a critical success factor according to the project manager, user and project team. This factor incorporates both *Client Consultation* and *Communication*. However, communication is a very broad subject, hence why it is its own factor in this case study, including external and internal communication, whereas in Davis' (2014) study it can be argued that being coupled as a factor with cooperation, collaboration and consultation that it also incorporates both under a large umbrella factor. This factor will be divided into *Client Consideration* and *Communication* separately.

Client Consideration in the case study also includes the fourth and fifth factor in Davis' (2014) study, stakeholder satisfaction and acceptance, however there is a slight difference in perceptions as the project team does not consider stakeholder satisfaction as a critical factor, likewise the project manager does not consider acceptance as a critical factor. *Client Consideration* is therefore a factor disputably shared by the project manager, user and project team.

Another significant factor that can be identified in Davis' (2014) study is *Defined Direction*, labelled identifying/agreeing objectives/mission in the study. As a factor shared by the project manager, project team and executive, it is another noteworthy feature of internal perception.

Other factors identified in the study include *Schedule*, a common factor amongst the project manager and user in the study, labelled as time, in parallel with *Performance Measurement* defined as stakeholder satisfaction. *Organisation and Support* is also found as critical by the project manager and executive as top management support/executive commitment.

Delivery and *Management Approach* are two other factors that can be identified in the study as a critical success factor to the project manager, totalling eight factors from the case study identified in Davis' (2014) study: *Communication, Client Consideration, Defined Direction, Schedule, Organisation and Support, Performance Measurement, Delivery* and *Management Approach*.

One observation drawn from the survey results is that *Client Consideration* and *Defined Direction* are critical success factors in the view of the users, with 45.16% and 41.94% of the respondents rating them the most important factor to Scope One's long-term success, respectively

(see Appendix 14.4). One question raised by the research is the omission of *Schedule* from Question 5 of the survey, which is a minor flaw in the research, leaving an inconclusive result for that factor in specific connection to this question. The omission of *Communication, Organisation and Support* and *Management Approach* is because simply the research in this case study suggest that they are not critical success factors at this stage, however the results may have varied.

The research supports the relative subcriticality of *Delivery* and *Management Approach*, as only the project manager regards them as critical out of the four internal stakeholder groups.

With two internal stakeholder groups each supporting *Organisation and Support, Performance Measurement* and *Schedule*, as well as the low-showing in the survey response of Question 5 for *Performance Measurement*, these factors are also not critical to the success of the Scope One project. An honourary mention is *Technical*, although it does not feature in Davis' (2014) work, it achieved a very stable result in the survey as the third most important factor of the six options, scoring higher than *Defined Direction* as second most important factor – compensated by its strong result for first (see Appendix 14.4).

Moreover, the inclusion of *Schedule, Organisation and Support,* and *Communication* in the question may have produced differing results. It is due to the results of Davis' (2014) study that *Communication* is given great consideration in this question, however when breaking down the definitions, the definition in the study is merged with another factor in the case study, suggesting that it is not strong enough evidence to be conclusive.

Two unquestionable conclusions that can be drawn from the data is that *Client Consideration* and *Defined Direction* are critical success factors in the Scope One project. With their dominance of the question in the survey as well as the fact that three internal stakeholder groups repute them both as critical factors portrays a strong influence on the outcome of the project.

Conclusion

The case study reveals a number of themes throughout the paper. There are defining changes from question to question that expose the critical success factors of Scope One. This chapter will provide the results of each question, briefly analyse the data collected and provide recommendations to the organisation about the Scope One project.

1. What is a critical success factor?

The first question acknowledged the 11 critical success factors identified from the literature in the framework. The 11 critical success factors are *Defined Direction, Schedule, Organisation and Support, Personnel, Communication, Client Consideration, Management Approach, Risk Awareness and Avoidance, Technical, Delivery* and *Performance Measurement*.

2. How do critical success factors tend to change over a project's life cycle?

Assessing how the 11 factors applied to Pinto and Prescott's (1988) study found *that Organisation and Support, Personnel, Communication* and *Performance Measurement* were all ruled out as critical success factors, with the latter three never being critical factors at any stage of the project life cycle.

In contrast, five factors were deemed critical success factors as the study found them to be critical during the implementation phase of the life cycle; *Defined Direction, Schedule, Client Consultation, Technical* and *Risk Awareness and Avoidance*.

3. What management styles and approaches have been used throughout the project?

The agile – incremental and iterative development – approach to the project ruled out *Organisation and Support, Management Approach, Technical, Risk Awareness and Avoidance, Delivery* and *Performance Measurement* as a result of analysis of internal project variables and the rigorous processes involved in the project's development, as well as the fact that, for example *Organisation and Support* and *Management Approach* were critical factors in the earlier stages, however now that the policy and strategy has been successfully established are now expired critical factors.

Defined Direction, Schedule and *Client Consultation* were identified as critical success factors according to agile methods, as time, cost and quality are three fundamental features not only to project management success, but the customer and service orientation of an agile approach suggests similar reasoning for the project's success.

4. What are the assumptions and constraints of the project?

The assumptions and constraints revealed that *Communication, Technical* and *Delivery* are all subcritical factors despite their significance. Upon assessment, *Communication* is an area that could be improved between teams, however none of the factors have reached importance of a critical nature at this stage in the project.

Once again, *Defined Direction, Schedule* and *Client Consideration* are the resulting critical factors from the assumptions and constraints of the project. This chapter revealed how the direction and the client are linked, as involving the client is a commanding part of the scope and a key aspect towards the quality and creating value with the project.

5. What are the external influences on Scope One's success?

Risk Awareness and Avoidance is ruled out as a critical success factor when considering the external influences, due to the limited preventative measures that the company can take in response to these influences, although they are aware of them.

Client Consideration is once again a critical factor, as regardless of the external influences the customer is the key differentiator that can contribute towards the project's success.

6. What factors can contribute to agile projects being considered a failure?

Four factors were ruled out after assessing the failure factors in agile projects from Chow and Cao (2008): *Organisation and Support, Personnel, Management Approach* and *Technical*. These factors were broadly highlighted within the failure factors, but analysis dismissed their criticality in regard to the Scope One project.

7. What are stakeholder perceptions of project success?

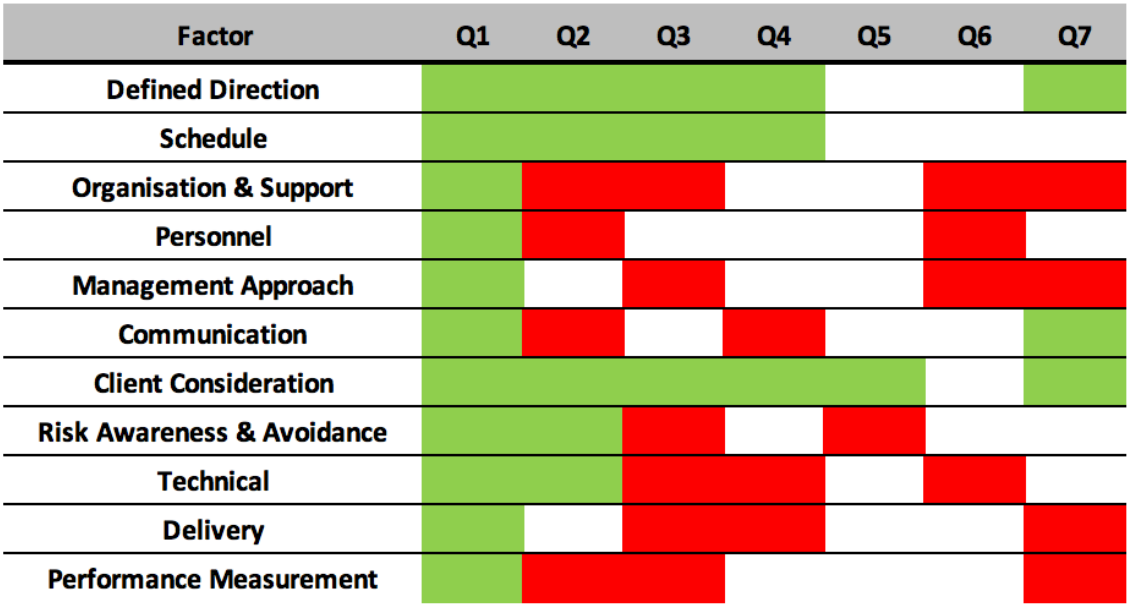
Organisation and Support, Management Approach, Delivery and *Performance Measurement* were factors that were dismissed as critical by applying and assessing the internal perception of success as laid out by Davis (2014).

According to her study, the success perceptions revealed that *Defined Direction, Communication* and *Client Consideration* are three factors that are collectively critical to the project manager, user, executive and project team.

Result

The most constant factor throughout the case study is *Client Consideration*, featuring as a critical success factor in six of the seven questions in the paper. *Defined Direction* is the next most frequent factor to feature, in five of the seven questions and *Schedule* in four of the seven.

Figure 5 – Case Study Critical Success



Not only was *Client Communication* the most featured factor in the study, its criticality is also reflected in the user survey, closely followed by *Defined Direction* (see Appendix 14.4). The strategic approach to the project has kept the client requirements and needs very closely involved in the thought-processes throughout, alongside the project management success factors: time, cost, scope and quality. The relationship between the four project management factors and acceptance from the client is very close but not dependent – one measure of success of the project is client satisfaction, another is achieving it within time, budgetary and quality boundaries.

Communication, Risk Awareness and Avoidance and *Technical* are all factors that were critical in two of the questions presented in the case study. In tandem, *Personnel* and *Performance Measurement* are factors that are not found critical through any of the questions in the case study, but like the previously mentioned factors, their interconnectivity and the dependence of the project on these factors is unquestionable. These factors are integral to the success of the project, however their criticality does not waiver; the persistent need to address these factors is consistent throughout the project.

Finally, *Organisation and Support* and *Management Approach* are two factors that are also not found critical at any time in the study. The arguments suggest that although critical during the earlier stages of the project, their effectiveness has already been proved, meaning they bear less importance at this stage of the project. *Delivery*, however, is a factor that has been found to bear no criticality in the study.

Recommendations

The study has limitations that would serve in the interest of the project to address. Having focused on the internal perceptions of success, the lack of external input is one limitation that can be channelled to strengthen the Scope One service. Moreover, the external environments that Scope One operates in are changing, therefore the needs and requirements of the clients and users are also changing. The results of the study has produced three recommendations to the organisation, all focusing on external clients.

'External clients' is a broad category that can be divided into multiple different groups: former, existing, potential, target etc. Further information on success perception, specifically from active clients and external users of the service would offer extremely insightful data on these specific perceptions of the service. This would strengthen the study, particularly as it could provide answers as to whether client and user perceptions are truly aligned as Davis's (2014) study suggests. In addition, it can help provide direction for further developments, by underlining what factors external clients and users are actually considering in relation to success, and contribute towards formulating strategies to appeal to more potential clients.

Another indicator is very short and periodic user satisfaction surveys, intended for both internal and external users, continually providing the organisation with feedback. Another idea is to point out new features and request feedback on it, a simple thumbs up or thumbs down option can generate quick responses and data that can be used going forward. Not only would it provide data that can be used to assess risk and measure performance, but it would also allow the development teams to understand what features have more utility than others, indicating which areas need more focus. This can, in turn, reveal which features require more attention, greater development and sharper refinement. By way of giving input, the client influences the output, altering the scope and direction, but preserving the quality boundaries being demanded.

Maintaining a client-focused approach and tailoring the service to the client is a running theme of the development. Valuable criticism from potential clients that decline the service can portray an impartial viewpoint of the market's perception of the service, or even identify individual needs of clients that can contribute towards a competitive advantage should it be achieved. Paired with the analytics gathered from activity occurring on the platform, the company can assess what features are valuable to potential clients. This can alter the development pipeline and ensure that the company delivers relevant updates based around the information received. Expanding the detail and amount of responses received will offer new ideas and alternatives to consistently improve the service. Key pieces of information for improving the service is understanding the client and the users, and making progress with Scope One based on their expectations, requirements and opinions .

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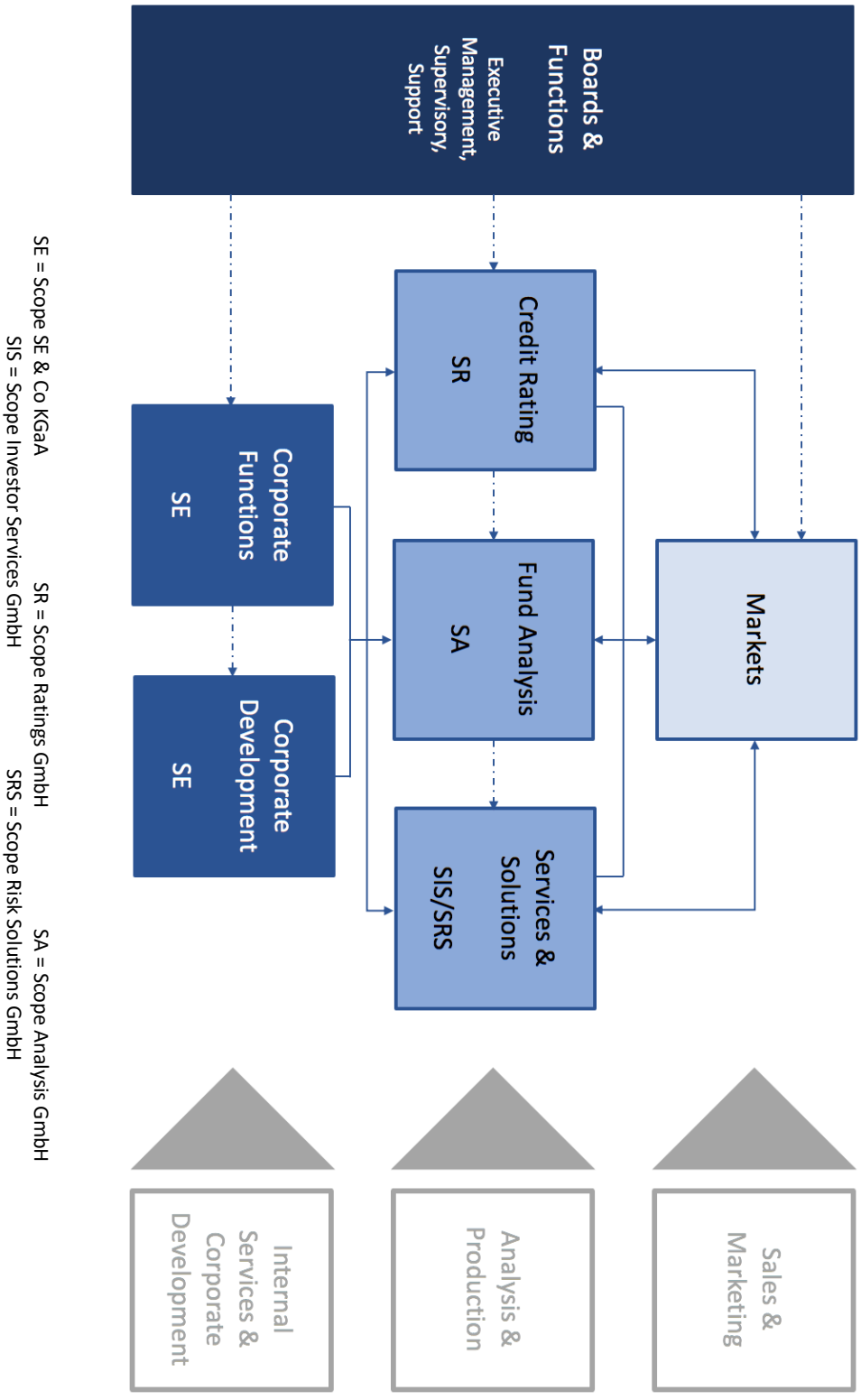
Appendices

Appendix 1 - ESMA Credit Rating Agency Market Share Calculation 2018

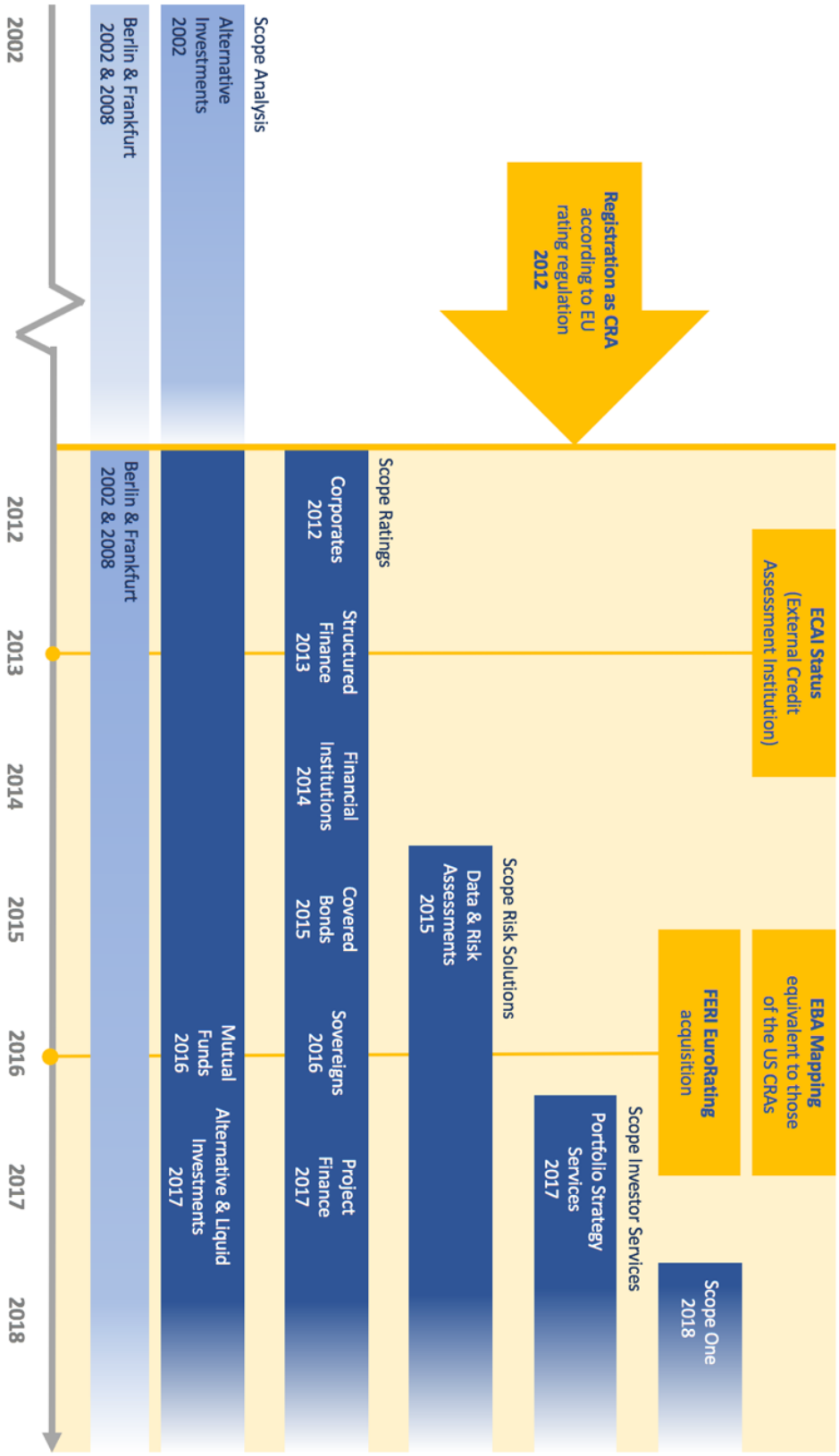
Name of CRA	Market Share %	YoY Change	<10%
S&P Global Ratings	46.26		-
Moody's Investor Service	32.04		-
Fitch Ratings	15.10		-
DBRS Ratings	1.88		Yes
The Economist Intelligence Unit	0.86		Yes
CERVED Rating Agency	0.82		Yes
AM Best Europe Rating Services	0.77		Yes
CreditReform Rating	0.51		Yes
Scope Ratings	0.28		Yes
GBB-Rating	0.28		Yes
Euler Hermes Rating	0.20		Yes
Assekurata	0.19		Yes
CRIF Rating	0.17		Yes
Axesor Rating	0.14		Yes
ICAP	0.12		Yes
Capital Intelligence Ratings	0.11		Yes
ModeFinance	0.10		Yes
ARC Ratings	0.06		Yes
Spread Research	0.04		Yes
Dagong Europe Credit Rating	0.03		Yes
BCRA Credit Rating Agency	0.01		Yes
INC Rating	0.01		Yes
EuroRating	<0.01		Yes
Rating-Agentur Expert RA GmbH	<0.01		Yes
European Rating Agency	<0.01		Yes
Kroll Bond Rating Agency	-	-	-
Nordic Credit Rating AS	-	-	-
TOTAL	**100**		

Appendix 2 – Scope SE & Co KGaA

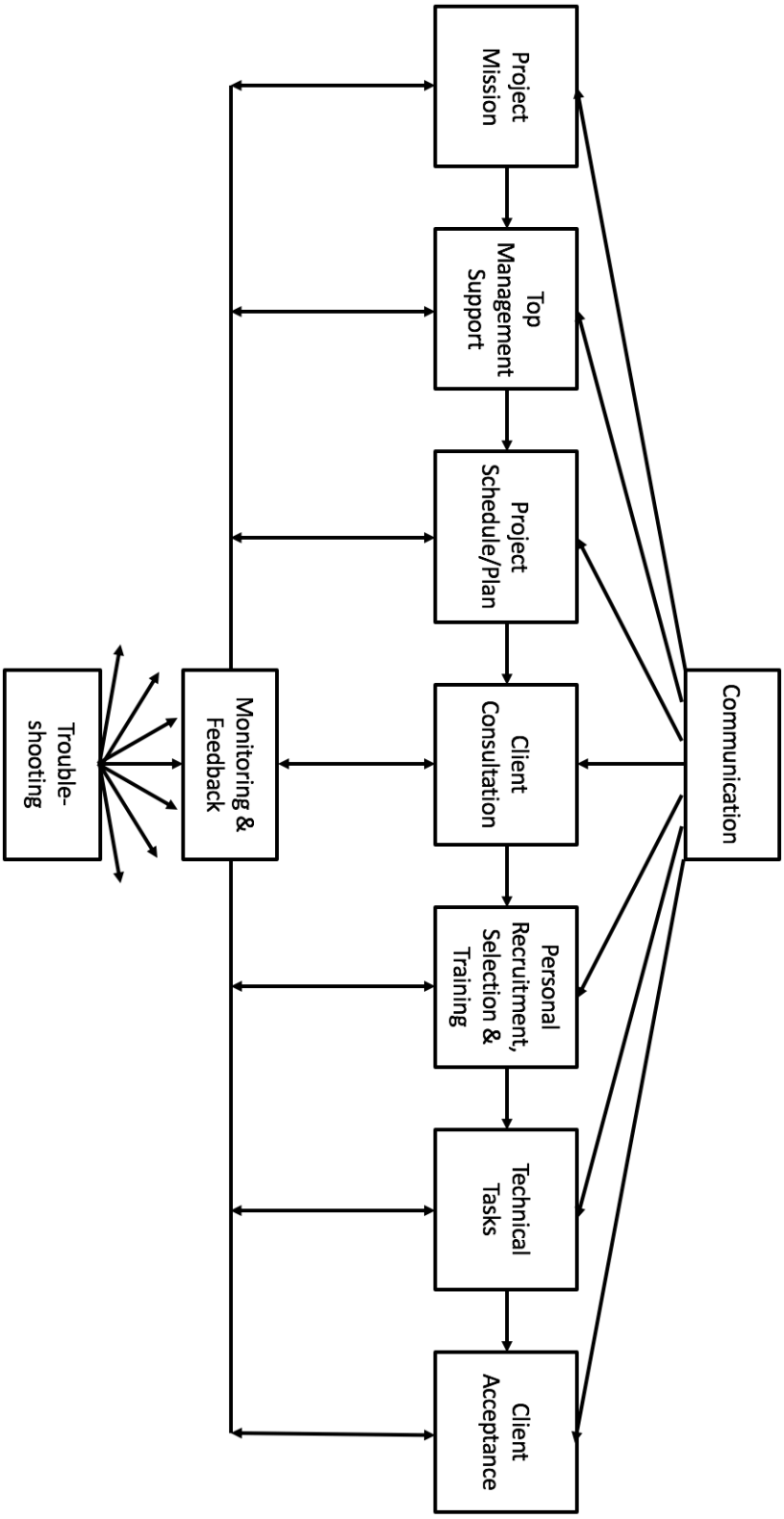
Appendix 2.1 – Organisational Structure



Appendix 2.2 – Timeline

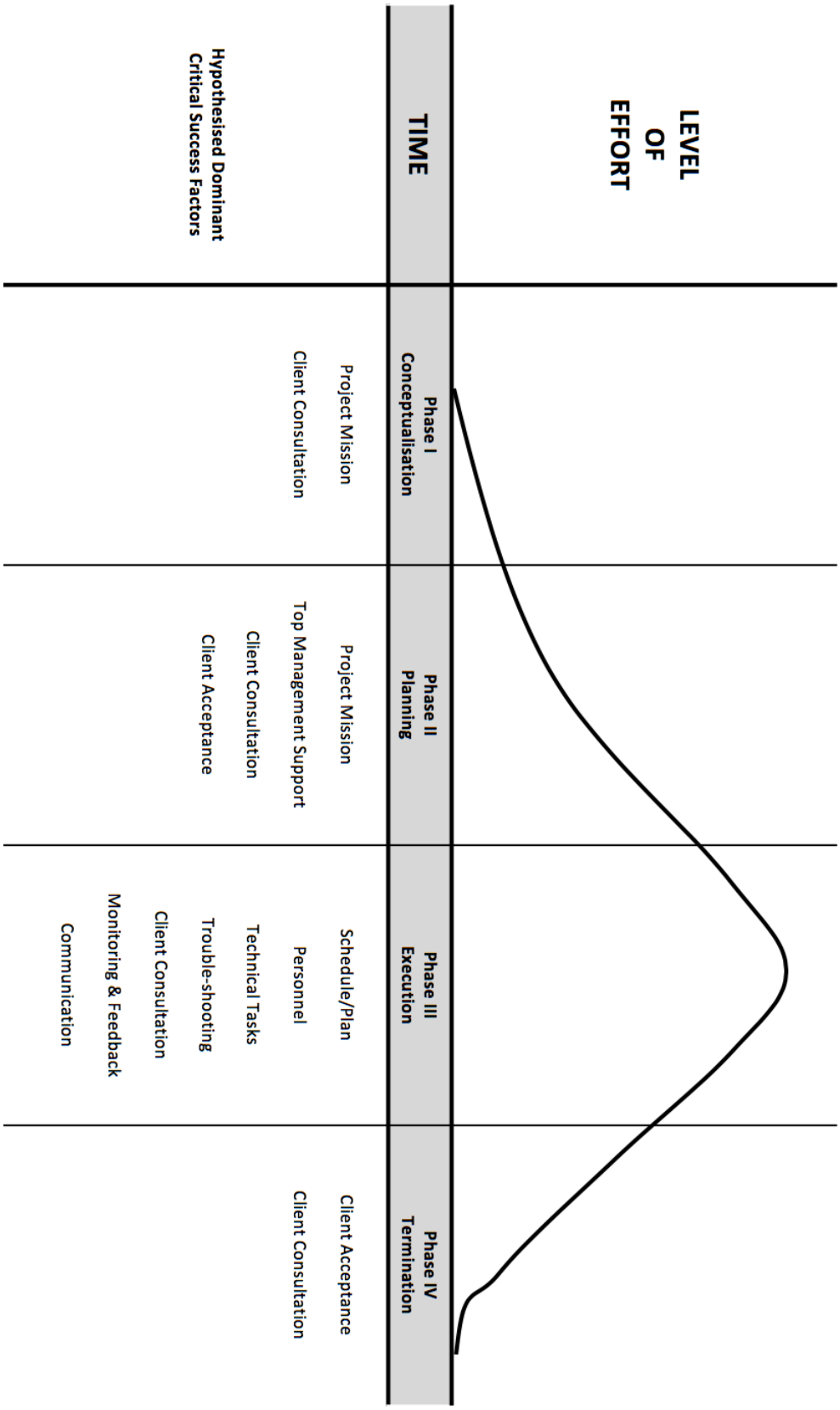


Appendix 3 – Pinto & Slevin (1987) Critical Success Factor Framework in Project Implementation



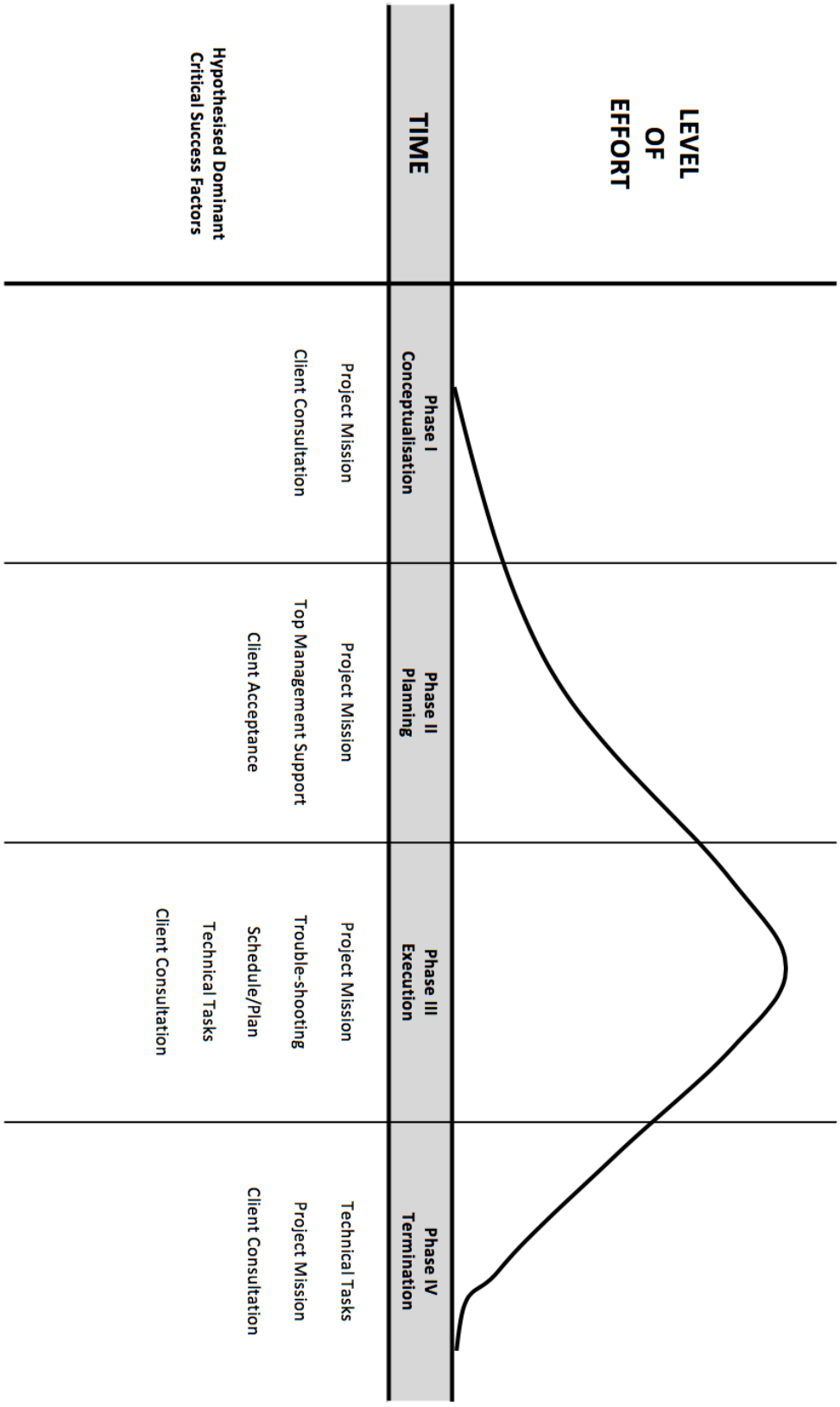
Appendix 4 – Pinto & Prescott (1988) Critical Success Factors in the Project Life Cycle

Appendix 4.1 – Hypothesis



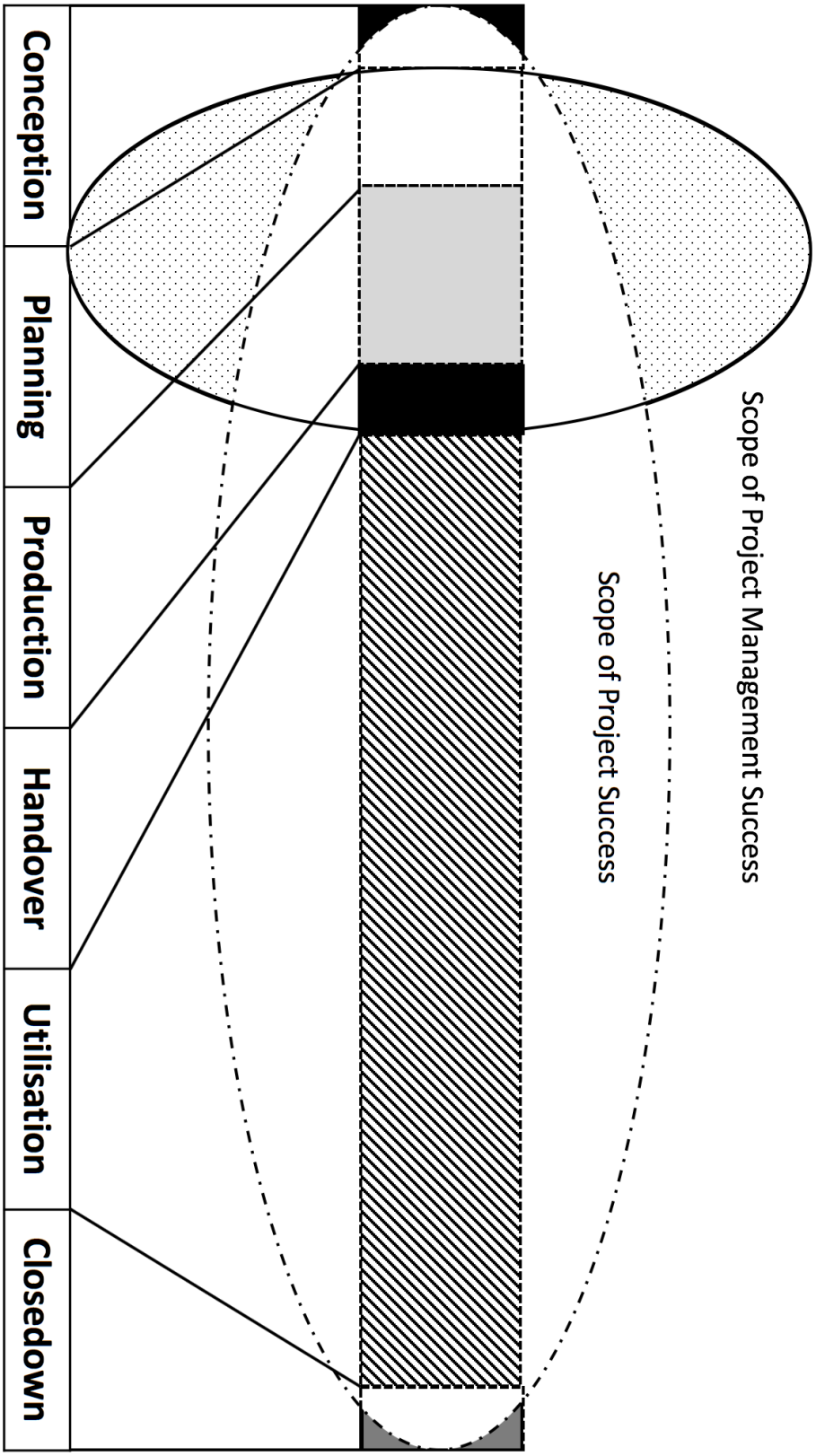
Stages in the Project Life Cycle
(Adams & Brandt, 1978; King & Cleland, 1983)

Appendix 4.2 – Result



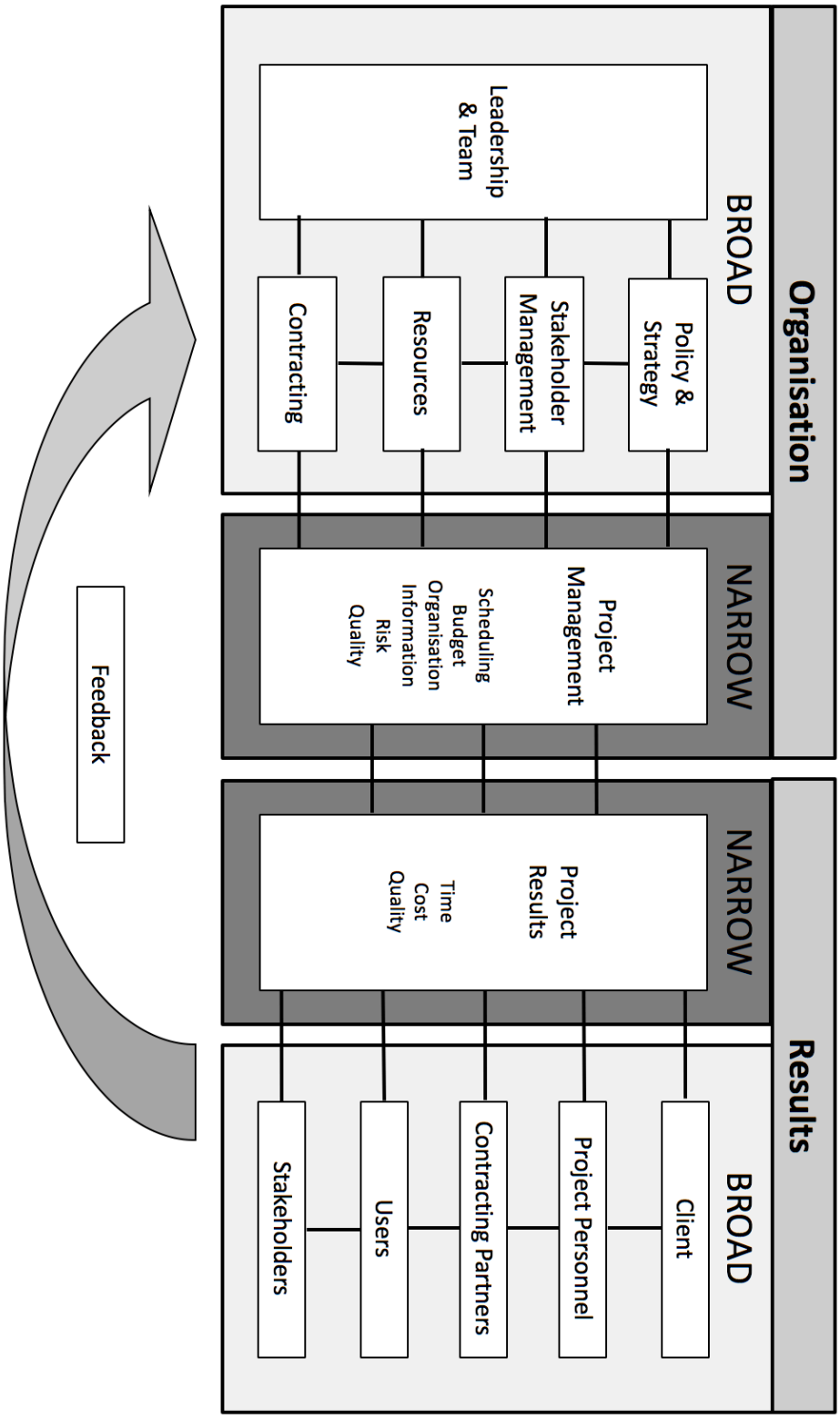
Stages in the Project Life Cycle
(Adams & Brandt, 1978; King & Cleland, 1983)

Appendix 5 – Munns & Bjeirmi (1996) Project Management Scope of Success and Project Scope of Success in the Project Life Cycle



Appendix 6 – Westerveld (2003)

Appendix 6.1 – The Project Excellence Model



Appendix 6.2 – The Five Project Types

	I Product Orientation	II Tool Orientation	III System Orientation	IV Strategy Orientation	V Total Project Management
Perception	"A project is an orientation consisting of different disciplines to achieve an end product defined by the client."	"A project is a process that leads to an end product by using a methodology with several tools and techniques."	"A project is a system consisting of contract partners and project organisations set up to achieve a set end product whereby demands from users and stakeholders are taken into account."	"A project is an organisation from directly involved parties to fulfill the need of the client and users within the boundaries set by external stakeholders."	"A project is a complex network of closely related stakeholders trying to fulfill the need of the client and users."
Organisation	1. Simple hierarchic control 2. Clear work descriptions 3. Progress reports 4. Effectiveness 5. Executing tasks	1. Strong division of tasks 2. Supporting tools 3. Phased execution 4. Efficiency 5. Reacting to conflicts	1. Control stakeholders 2. Inform stakeholders 3. Cooperate with contractors 4. Quality of work processes 5. Estimate and control risks	1. Customer based interaction 2. Consult client and users 3. Serve needs of client and users 4. Flexibility 5. Pro-actively manage risks	1. Sharing responsibility 2. Cooperative decisions and execution 3. Long-term solutions 4. Innovative methods 5. Manage risks together
Key Results Area	Project Results	Project Results Appreciation Project Personnel	Project Results Appreciation Project Personnel Appreciation Contracting Partners	Project Results Appreciation Project Personnel Appreciation Contracting Partners Appreciation Client Appreciation Users	Project Results Appreciation Project Personnel Appreciation Contracting Partners Appreciation Client Appreciation Users Appreciation Stakeholders
Key Organisational Area	Project Management	Resources	Contracting	Policy and Strategy	Stakeholder Management
Metaphor	Tunnel: The external parties are not participating in the project. The project organisation only takes care of the end product.	Machine: The project is organised in a controlled clear manner. External parties are regarded as potential threats to the project.	Merchant: The project organisation tries to execute it's own approach as well as possible, while monitoring the interests of users and stakeholders.	Organism: The project organisation continually adapts its behaviour based on the behaviour of the client and users.	Spider Web: The project organisation forms a complex network of closely related parties.
Coping with External Parties	Protect Denial	Influence	Inform Control	Adapt	Cooperate Participate
Characteristics of Project Situations	Small sized Simple Static environment Set end product Clear working method Projects out of necessity	Small/medium sized Simple, can be technically complex Stable environment Set and specified end product Clear working method Projects out of necessity	Medium sized Technically comple Slowly changing environment Clear end product Working methods mostly clear Projects out of necessity and to fulfill need	Medium/large sized Very complex Dynamic environment No clearly specified end product No clear working methods Projects to fulfill a need	Large sized Very complex Turbulent environment No clear end product Only boundaries are known Projects to fulfill a need
Key to Success Critical Control Aspect	Opportunism	Efficient use of resources	Read the environment	Flexibility	Establish consensus
	Time OR money	Time AND money	Time, money, quality, risks	Time, money, quality, risks, organisation	Time, money, quality, risks, organisation, information

Appendix 7 – Davis (2014)

Appendix 7.1 – Success Factors Across Stakeholder Groups

	Success Factor Theme	Project Manager	Client	Sponsor	Owner	Executive	User etc.	Project Team
1	Cooperation/Collaboration/Consultation/Communication	x	x		x		x	x
2	Time	x	x	x			x	
3	Identifying/Agreeing objectives/Mission	x				x		x
4	Stakeholder satisfaction (Quality)	x	x				x	
5	Make use of finished product/Acceptance		x				x	x
6	Cost/Budget	x	x				x	
7	Project Manager competencies and focus	x		x				
8	Delivering strategic benefits	x		x				
9	Top management support/Executive commitment	x				x		

Appendix 7.2 – Comparison of Stakeholder Groups Success Factors

Stakeholder	Success Factor in common	Total Number of Success Factors in common
Client and User etc.	1, 2, 4, 5 & 6	5
Project Manager and Client	1, 2, 4 & 6	4
Project Manager and User etc.	1, 2, 4 & 7	4
Project Manager and Sponsor	2, 7 & 8	3
Project Manager and Executive	3 & 9	2
Project Manager and Project Team	1 & 3	2
Client and Project Team	1 & 5	2
User etc. and Project Team	2 & 5	2
Project Manager and Owner	1	1
Client and Sponsor	2	1
Client and Owner	1	1
Sponsor and User etc.	2	1
Owner and User etc.	1	1
Owner and Project Team	1	1
Executive and Project Team	3	1
Client and Executive	-	-
Sponsor and Owner	-	-
Sponsor and Executive	-	-
Sponsor and Project Team	-	-
Owner and Executive	-	-
Executive and User etc.	-	-

Appendix 8 – 12 Principles of The Agile Manifesto

1. Our highest priority is to satisfy the customer through early and continuous delivery of valuable software.

2. Welcome changing requirements, even late in development. Agile processes harness change for the customer's competitive advantage.

3. Deliver working software frequently, from a couple of weeks to a couple of months, with a preference to the shorter timescale.

4. Business people and developers must work together daily throughout the project.

5. Build projects around motivated individuals. Give them the environment and support they need, and trust them to get the job done.

6. The most efficient and effective method of conveying information to and within a development team is face-to-face conversation.

7. Working software is the primary measure of progress.

8. Agile processes promote sustainable development. The sponsors, developers, and users should be able to maintain a constant pace indefinitely.

9. Continuous attention to technical excellence and good design enhances agility.

10. Simplicity--the art of maximizing the amount of work not done--is essential.

11. The best architectures, requirements, and designs emerge from self-organizing teams.

12. At regular intervals, the team reflects on how to become more effective, then tunes and adjusts its behaviour accordingly.

Appendix 9 – Chow & Cao (2008) Success and Failure in Agile Projects

Appendix 9.1 – Failure Factors in Agile Projects

Dimension	Factor
Organisational	1. Lack of executive sponsorship 2. Lack of management experience 3. Organisational culture too traditional 4. Organisational cutlure too political 5. Organisation size too large 6. Lack of agile logistical arrangements
People	7. Lack of necessary skill-set 8. Lack of project management competence 9. Lack of team work 10. Resistance from groups or individuals 11. Bad customer relationships
Process	12. Ill-defined project scope 13. Ill-defined project requirements 14. Ill-defined project planning 15. Lack of agile process tracking mechanism 16. Lack of customer presence 17. Ill-defined customer role
Technical	18. Lack of complete set of correct agile processes 19. Inappropriateness of technology and tools

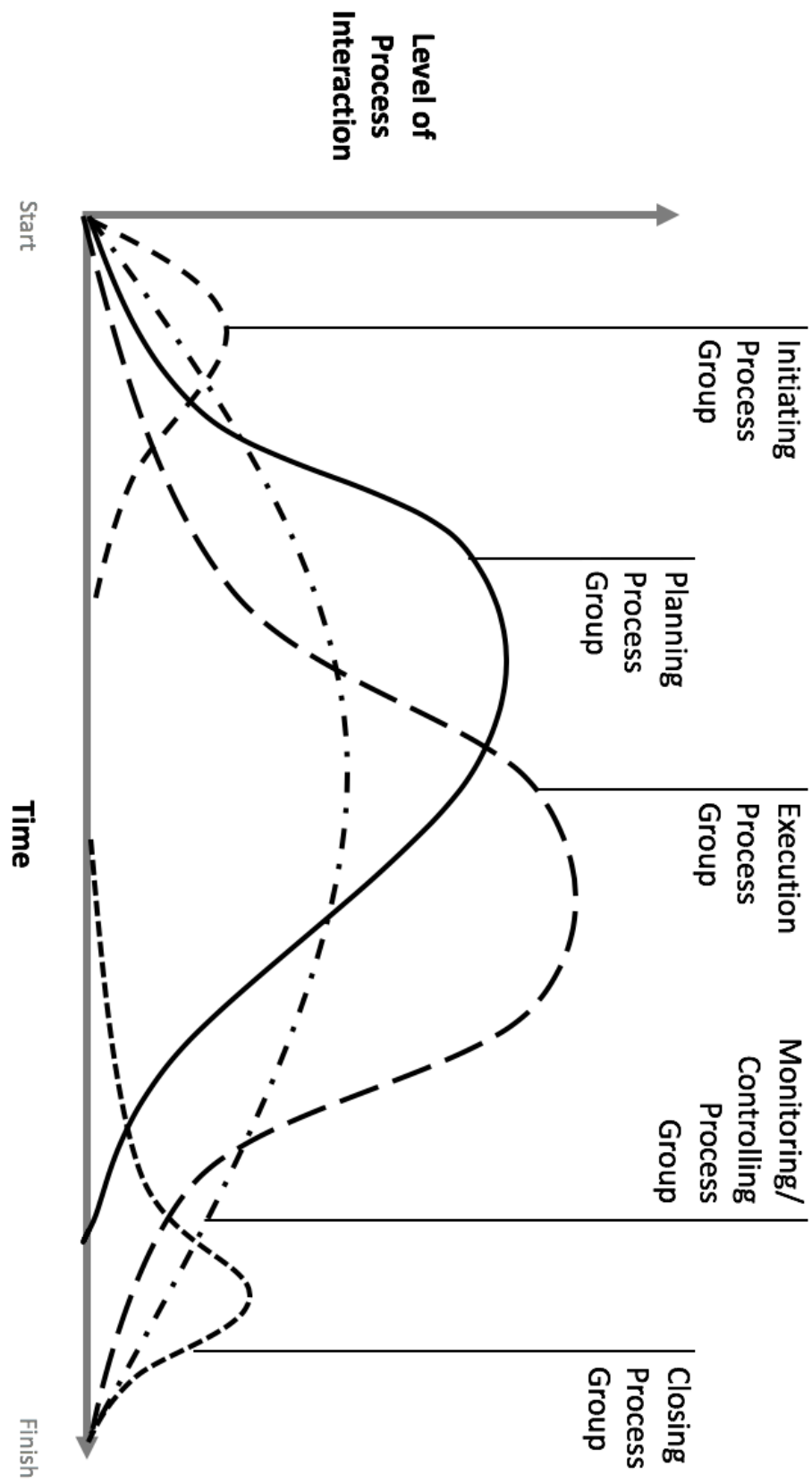
Appendix 9.2 – Success Factors in Agile Projects

Dimension	Factor
Organisational	1. Strong executive support 2. Committed sponsor or manager 3. Cooperative organisational culture instead of hierarchal 4. Oral culture placing high value on face-to-face communication 5. Organisations where agile methodology is universally accepted 6. Collocation of the whole team 7. Facility with proper agile-style work environment 8. Reward system appropriate for agile
People	9. Team members with high competence and expertise 10. Team members with great motivation 11. Managers knowledgeable in agile processes 12. Managers with 'light touch' or adaptive management style 13. Coherent, self-organising teamwork 14. Good customer relationship
Process	15. Follow agile-oriented requirement management process 16. Follow agile-oriented project management process 17. Follow agile-oriented configuration management process 18. Strong communication focus with daily face-to-face meetings 19. Honouring regular working schedule - no overtime 20. Strong customer commitment and presence 21. Customer having full authority
Technical	22. Well-defined coding standards up-front 23. Pursuing simple design 24. Rigorous refactoring activities 25. Right amount of documentation 26. Regular delivery of software 27. Delivering most important feature first 28. Correct integration testing 29. Appropriate technical training to team
Project	30. Project nature being non-life-critical 31. Project type being of variable scope with emergent requirements 32. Projects with dynamic, accelerated schedule 33. Projects with small team 34. Projects with no multiple independent teams 35. Projects with up-front cost evaluation done 36. Projects with up-front risk analysis done

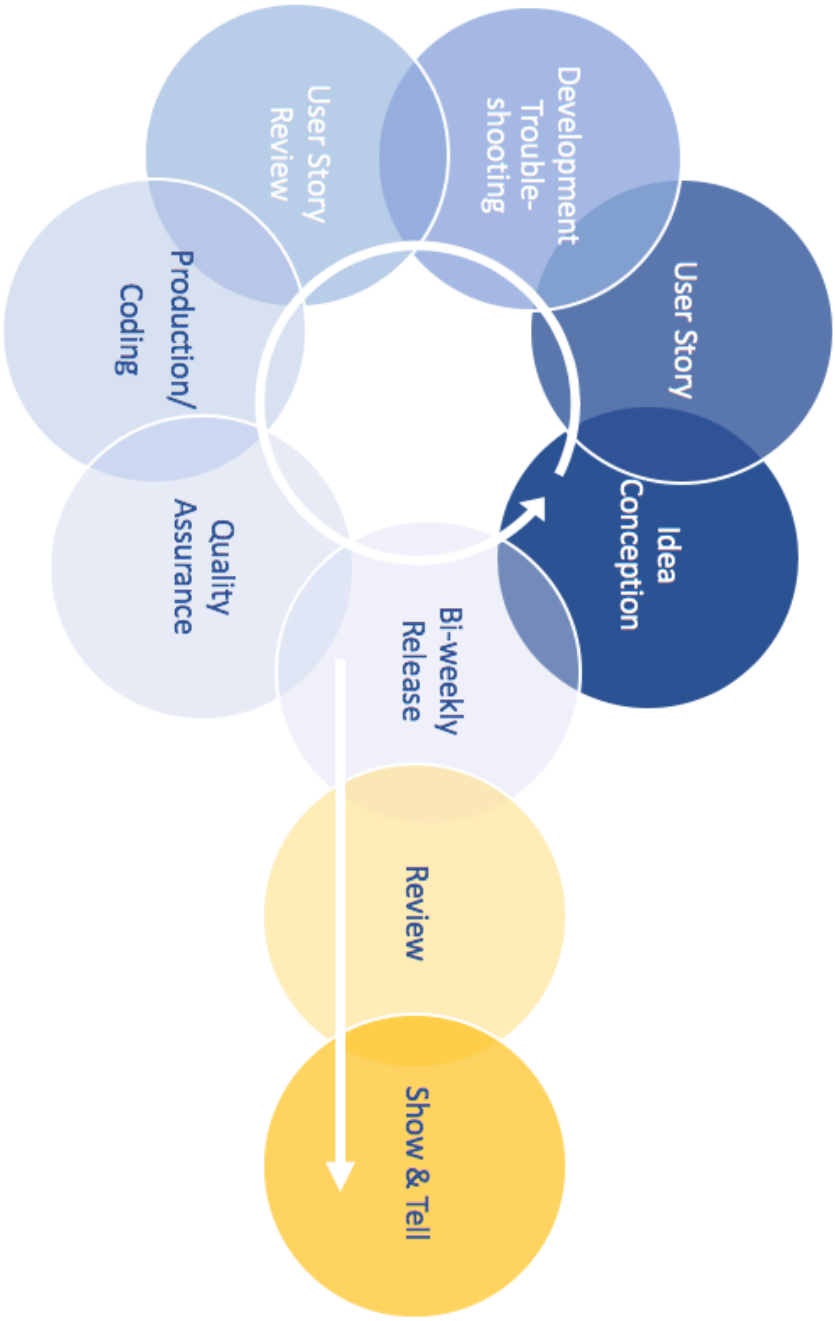
Appendix 10 – Case Study Theoretical Framework

	Pinto & Slevin (1987)	Munns & Bjeirmi (1996)	Cooke-Davies (2002)	Westerveld (2003)	Agile Software Manifesto (2001)	Chow & Cao (2008)
1	Project mission	Project implementation	Risk management education	Project results	Satisfy the customer	Management commitment
2	Top management support	Perceived values by users	Assigning ownership of risks	Appreciation by client	Agile processes	Organisational environment
3	Project schedule/plan	Client satisfaction	Maintenance of visible risk register	Appreciation by project personnel	Deliver working software frequently	Team environment
4	Client consulation		Up-to-date risk management plan	Appreciation by users	Business & developers must work together	Project nature
5	Personnel		Documentation of organisational responsibilities	Appreciation by contracting partners	Environment & support	Project type
6	Technical tasks		Keep project under 3 years	Appreciation by stakeholders	Face-to-face conversation	Project schedule
7	Client acceptance		Scope change control process	Leadership and team	Working software primary measure of progress	Team capability
8	Monitoring and feedback		Integrity of performance measurement baseline	Policy and strategy	Sustainable development	Customer involvement
9	Communication		Benefits delivery and management process	Stakeholder management	Technical excellence and good design	Project management process
10	Trouble-shooting		Portfolio and programme management practices	Resources	Simplicity	Project definition process
11			Metrics, feedback on current performanace and forecasts	Contracting	Self-organising teams	Agile software techniques
12			Continuous improvement of project management processes	Project management	Team reflection on effectiveness	Delivery strategy

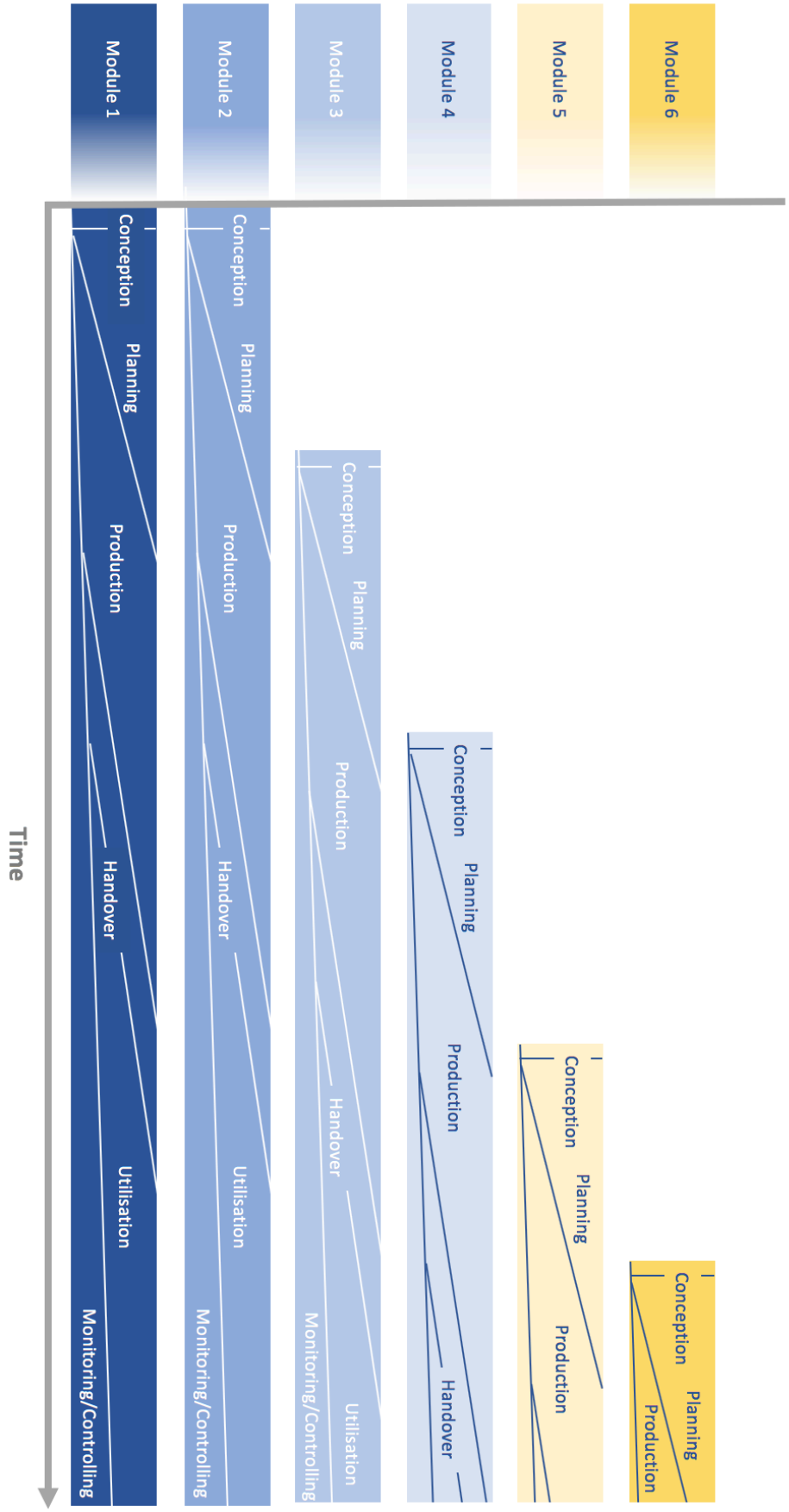
Appendix 11 – Wiboonrat (2016) PMBOK Five Stages of the Life Cycle and Process Group Interaction



Appendix 12 – Scope One Conceptual Software Feature Production Process

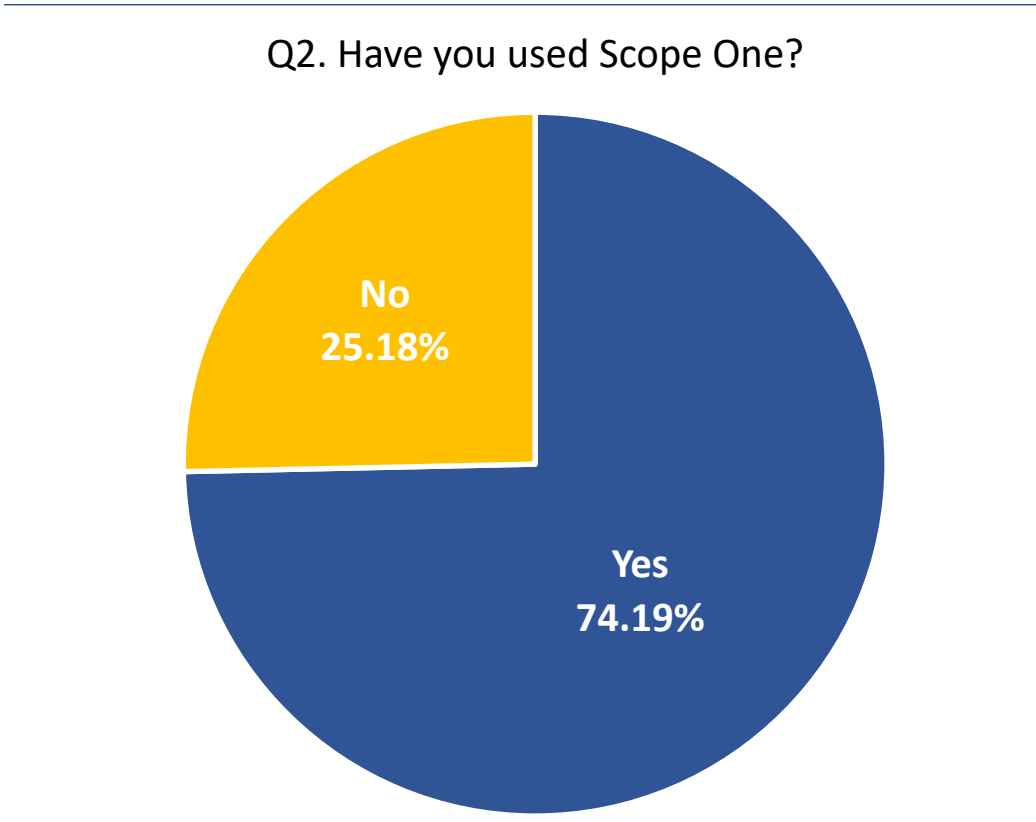


Appendix 13 – Scope One Conceptual Project Life Cycle

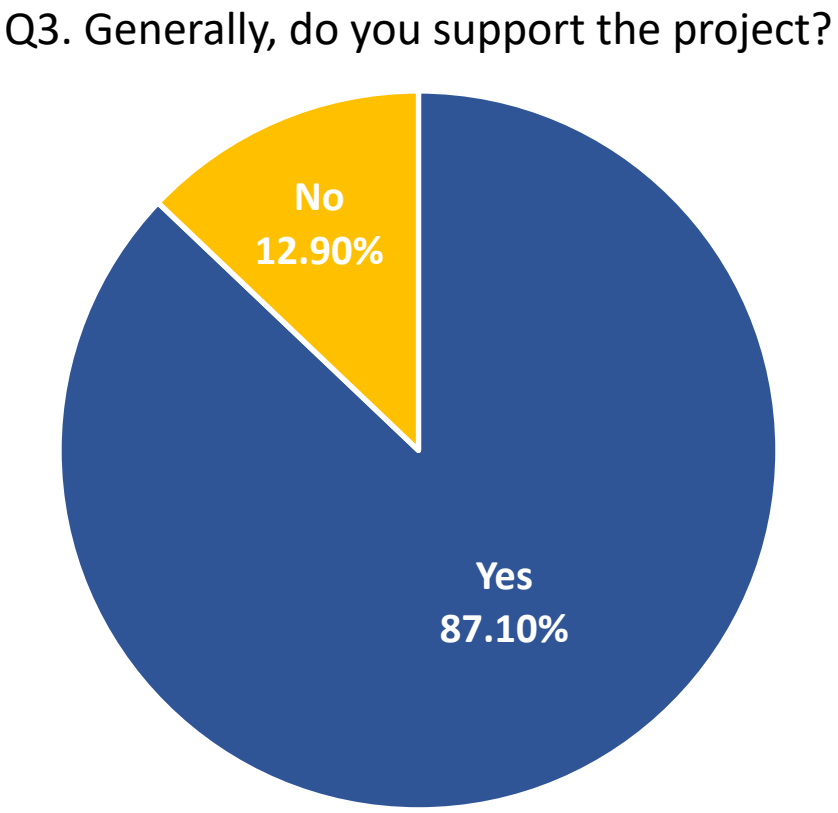


Appendix 14 – Scope One User Survey Results

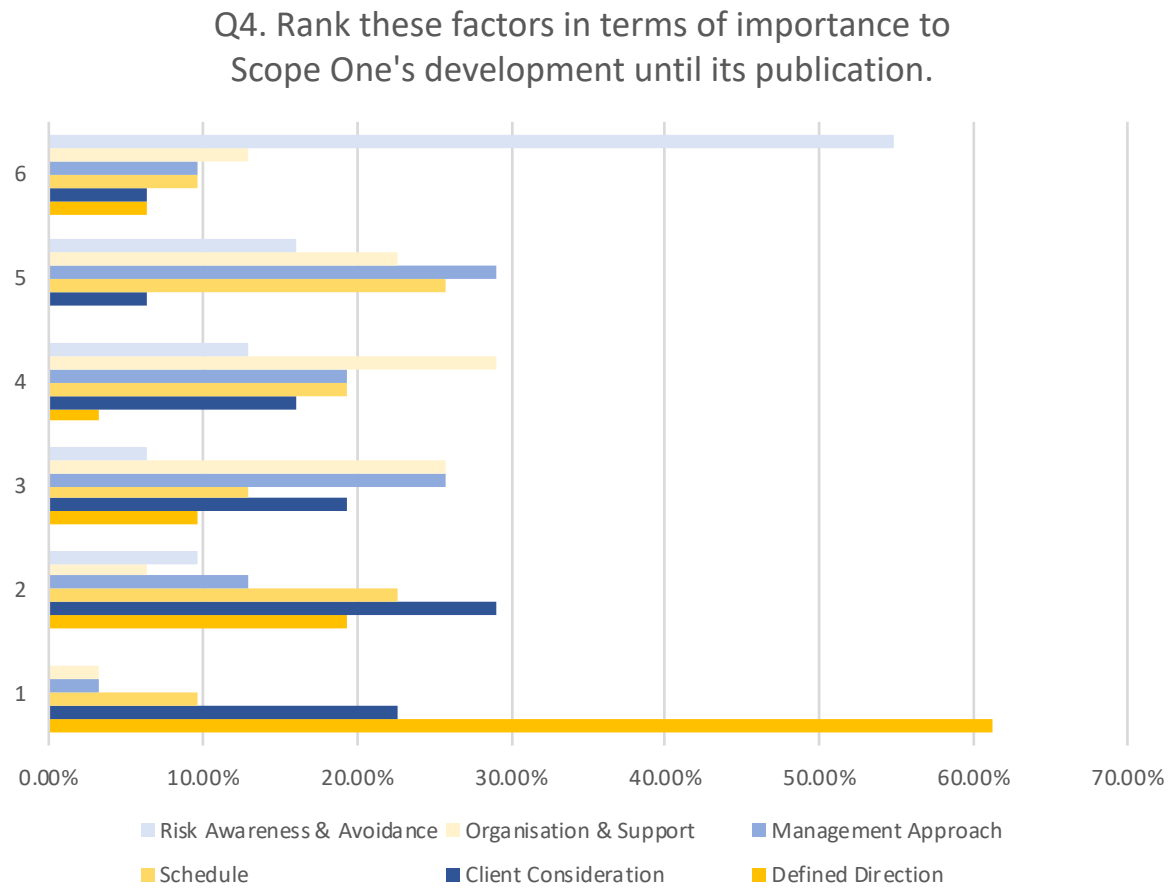
Appendix 14.1 – Q2: Have you used Scope One?



Appendix 14.2 – Q3: Generally, do you support the project?

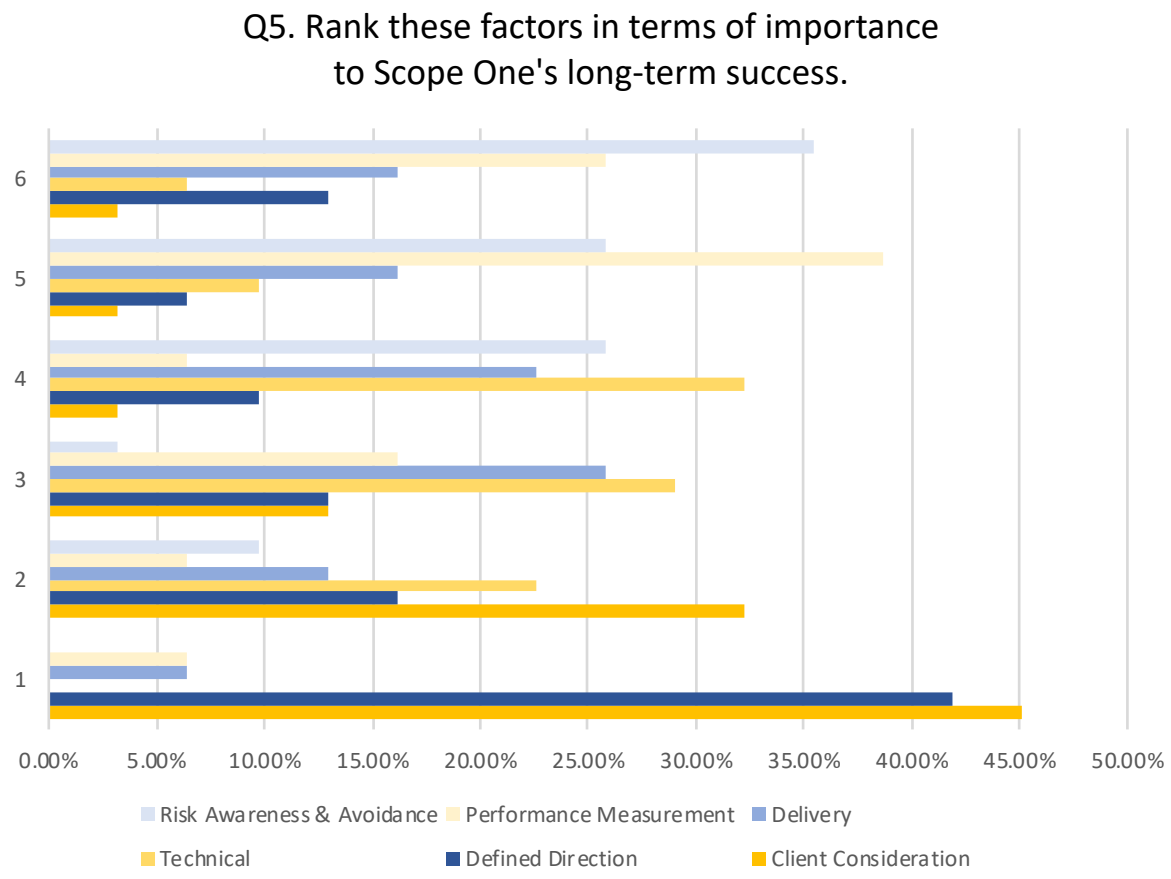


Appendix 14.3 – Q4: Rank these factors in terms of importance to Scope One's development until its publication.



Factor	1st	2nd	3rd	4th	5th	6th	Total
Defined Direction	61.29% 38	19.35% 12	9.68% 6	3.23% 2	0.00% 0	6.45% 4	100.00% 62
Client Consideration	22.58% 14	29.03% 18	19.35% 12	16.13% 10	6.45% 4	6.45% 4	99.99% 62
Schedule	9.68% 6	22.58% 14	12.90% 8	19.35% 12	25.81% 16	9.68% 6	100.00% 62
Management Approach	3.23% 2	12.90% 8	25.81% 16	19.35% 12	29.03% 18	9.68% 6	100.00% 62
Organisation & Support	3.23% 2	6.45% 4	25.81% 16	29.03% 18	22.58% 14	12.90% 8	100.00% 62
Risk Awareness & Avoidance	0.00% 0	9.68% 6	6.45% 4	12.90% 8	16.13% 10	54.84% 34	100.00% 62

Appendix 14.4 – Q5: Rank these factors in terms of importance to Scope One's long-term success.



Factor	1st	2nd	3rd	4th	5th	6th	Total
Client Consideration	45.16% 28	32.26% 20	12.90% 8	3.23% 2	3.23% 2	3.23% 2	100.01% 62
Defined Direction	41.94% 26	16.13% 10	12.90% 8	9.68% 6	6.45% 4	12.90% 8	100.00% 62
Technical	0.00% 0	22.58% 14	29.03% 18	32.26% 20	9.68% 6	6.45% 4	100.00% 62
Delivery	6.45% 4	12.90% 8	25.81% 16	22.58% 14	16.13% 10	16.13% 10	100.00% 62
Performance Measurement	6.45% 4	6.45% 4	16.13% 10	6.45% 4	38.71% 24	25.81% 16	100.00% 62
Risk Awareness & Avoidance	0.00% 0	9.68% 6	3.23% 2	25.81% 16	25.81% 16	35.48% 22	100.01% 62

Appendix 15 – Scope One SWOT Analysis

Internal	**Strengths** • Short-term and long-term strategies • Employee and management support • Agile management approach • Cloud back-up/security	**Weaknesses** • Reproduceable
External	**Opportunities** • Early market entry • Largely unaffected by Brexit	**Threats** • Competition more powerful in market • Competition more powerful financially • Regulatory changes • Cyber attack

Nature of market	Legal environment	Technological threats
• Early market entry • Competition more powerful financially • Competition more powerful in market	• Largely unaffected by Brexit • Regulatory changes	• Cyber attack

Appendix 16 – Scope One User Survey

This survey is made of five questions. The data collected from this survey will be used in research for The Hague University of Applied Sciences and Scope Group. By answering this survey, you agree to the inclusion of the data you provide in the study.
All responses will remain anonymous.

1. What department do you work in?

2. Have you used Scope One? (Yes/No)

3. Generally, do you support the project? (Yes/No)

4. Rank these factors in terms of importance to Scope One's development until its publication.

1) **Defined Direction -** project mission, goals, strategy
2) **Schedule -** time management, planning, budgeting
3) **Organisation and Support -** role of top management, working environment, project team
4) **Management Approach -** project manager, sustainable development, benefit realisation management
5) **Client Consideration** - (includes internal Scope One users) consultation, involvement, acceptance and satisfaction
6) **Risk Awareness and Avoidance** - trouble-shooting, risk management

5. Rank these factors in terms of importance to Scope One's long-term success.

1) **Defined Direction -** project mission, goals, strategy
2) **Client Consideration** - (includes internal Scope One users) consultation, involvement, acceptance and satisfaction
3) **Risk Awareness and Avoidance** - trouble-shooting, risk management
4) **Technical** - software development, security, scalability and compliance
5) **Delivery -** project implementation, benefit realisation management, marketing strategy
6) **Performance Measurement** - includes metrics, team reflection, personal, client satisfaction and value perception, earned value management (relative to time, cost and scope)

Appendix 17 – Interview 1 Transcript, 02.07.2018

1. **Can you explain what your role in the project is?**

I am the Project manager. So, it is my responsibility to make sure all the stakeholders involved are being kept up to speed and at the same time to ensure that the project is an overall success both from a technical point of view and a commercial point of view.

2. **At what stage in the project were you brought on board?**

That is a bit hard to define, because it's a modular project. I was brought in when the idea of Scope One has already been discussed and started, the first modules were already being worked on.

3. **When a project starts there is a desired outcome and there is often a strategy that's built to get to that outcome. Has the outcome changed since you joined the project? Or has the strategy to get there changed at all?**

The strategy has changed since I took over the role as project manager. I did have influence on how we would pursue our goals but the goal itself is still set. (The strategy) has changed from what do we do first, second, third etc - a question of prioritisation. Also, which people to get involved, and some of the processes. It is difficult to differentiate between when the strategy (planning) stops and the process begins, but a couple of processes have been put in place since I joined the project to help me steer it better and that involves close cooperation between the IT and the business. We came up with different ideas about how to make sure that we get the ideas from the business side implemented into the system without too much friction.

4. **There must be a launch date in mind with the project. Has that launch date changed much or has it always been a bit unsure? The timeline from start to finish hasn't changed so much?**

It has always been a bit unsure, because there were many different key performance indicators (KPIs) that had to be taken into account and a couple of them have been added to the list over the last couple of months. I think the overall idea was to get as far as possible as fast as possible and then by mid-2018 be able to deliver and start signing on external clients. This goal has been achieved. It's an ongoing process; it hasn't changed substantially. It's more an agile working process, that means we do have desired outcomes and desired timelines, so far we have been able to keep almost all of them. At the same time we have received client feedback, we received feedback from the regulators, for example, or market needs to address, that we need to make sure that we consider them, so taking into consideration everything that is constantly evolving and changing some of the deadlines changed but not because they haven't been met but because we deliberately changed them. We said "look, we can either finish the project until that point of time then start another part", but really some of the changes referred directly to the project we're working on right now. So we had to take that into consideration. That moves the timeline further ahead, obviously.

5. **You said you are involved with stakeholder engagement. Can you reveal the initial reactions of the board and the shareholders on Scope One?**

The initial reactions were quite positive. The idea was to have a digitization project in place that helps putting us on the map as a credit rating agency that is not one of the Big Three. In doing so we have to differentiate ourselves not only in terms of methodology or the analysts that work here, but also in terms of what do we do differently from a business perspective. The digital approach that we took and what we are willing to offer them - the keyword here is "subscription ratings" - is what we believe will give us the edge in order to make a difference. This resonated very positively both with members of the board as well as some of the managing directors of Scope.

6. **Were there any crucial steps in the planning or development that you feel were not given enough attention, or other steps that were given too much? You mentioned prioritisation, do you think there was too much time and effort put into one part?**

That's a good question. One general thing that I can speak freely about is the attention to details. One of the things that I tried to address quite early was that we don't need to have the perfect solution in place in order to present it, what we need to have is a working solution in place and then based on the basic functionality we can further improve and expand what we want to do with it. Rather than having work in backshop for the perfect, perfect product before we roll it out, we needed to get something out first and then receive feedback. Otherwise you can fix things that don't need fixing, for example, because the overall feedback is that the functionalities are enough or we would really need a certain feature, than rather concentrate on the feature that is actually required than on ten other features that might be nice to have but nobody is really looking for them, or misses them at that point in time.

7. **As I am sure initial market research was carried out, can you tell me how this was done and how extensive it was? ...The feedback was taken from people in the market?**

The project has already been on its way prior to me joining the firm, so this would be something that took place before then. I am probably not qualified to speak about the details of that, but I am aware of the fact that some feedback had been collected upfront and there was a clear understanding that the market has a need for a digitalised platform that offers rating information in a very easy and fast manner. ...I believe so, yes.

8. As there are other similar products that exist, for example, Fitch Connect, you are aware of that? Did you realise this before the project began?
Yes of course. What we did was look at our competitor's offerings as well to see and understand what they are offering, and whether our approach really different from theirs. We did that upfront.

9. Mr. Schoeller mentioned in an interview with Finanz Magazin in November 2016 that "after next year, we'll develop a secure, fully digitalized platform that gives investors access to risk analyses on nearly all major European corporates" - do you think that was a reference to Scope One? If so, why was it kept such an internal secret for so long? And how do you think this has affected the development?
Yes, pretty sure. I see what you're referring to. I don't think it has really been a secret, I think it was more of a lack of communication with everybody that might be involved at one point of time or another. The thing is there is no department working exactly on the configuration of the platform that is capable of doing what Florian Schoeller has announced in that interview. A couple of stakeholders had already been informed upfront, obviously, and the board knew about it, different departments from within the firm have been involved. Obviously not everybody. The reason why not everybody wasn't involved from an early stage was because if you don't have something to show for, so to not create any uncertainty about what is being developed and what we're working on in the background. The decision was made that the product will be introduced to the broader part of the company once there was something to show for. The risk is obviously that if you don't ask those that are responsible for their areas of expertise you might not hit the target. On the other hand, from my understanding, all the relevant heads of departments have had discussions upfront on a very high-level basis about what it is the market needs, what our clients need, what we need in order to become more efficient and some of the managing directors have been actively involved in providing feedback, have actively participated in the development of certain features, but not everyone to the same extent. That is partly because everybody has a different look based on which department they are with, and basically what we needed to do was find common ground, find something that is basically functioning and then expand on it rather than trying to get 15 different expert visionary opinions into one product. If you start with taking into consideration the ideas of every expert in his field has, you end up with a product that can do a million things but it's very weak when it comes to the basics and we decided to do it the other way around; build something that's highly functional in its core and then expand on it. We had to start somewhere, so we started with certain departments and left out others at this point in time. Little by little, and this is why it's been made modular, we expand on the existing programme and add different modules that are specifically designed to meet the requirements from each business section. All of them will rely on the basic core functions that are in place and fully working right now.

10. You mentioned the other modules that will be built in the future. What is the forecasting of the future of Scope One?
The most imminent modules that will be developed are the fund analysis module and so-called risk monitor, which enables our clients to keep a close eye on the development of their risk assessments. You have to understand that the platform is a technical device that we use to build around, the platform is already there and in place, everything we do now is not considered a separate platform, but rather it's a module that we have designed ourselves with our own development team. So, everything that we come up with right now seamlessly fits into the Scope One project.

11. So you think there'll be less mistakes from here on out? Because you have the foundation of the modules, and you regenerate that for the different modules?
That's part of the agile working environment. What I was talking about earlier, I wouldn't say they were hiccups, because the market is constantly evolving and the world is constantly changing, it's rather that we try to keep in consideration the updated data that we received from the market, from clients, from our own people and sometimes that requires that we change our perspective. That doesn't mean that the strategy is at stake. The main strategy has always remained the same, it's just little nuances that we've adapted to make sure that we have the best possible outcome.

12. I am aware that you have a legal background, were there any grey areas or regulatory barriers that affected the progression of the development?
Absolutely, because what we're doing is something that I wouldn't say is entirely new but it's fairly new, there are lots of grey areas where we had to work together with different legal departments, external legal counsel and compliance. We also had to present in front of ESMA, the regulator, to make sure that everything that we have come up with is actually on track, so basically every single time you invent or reinvent something, you have a disruptive approach to some things already there, or you come up with something entirely different. That's always going to be a grey area in terms of legal requirements. The key is to address them early on and to think about them and then come up with a solution that is both legally sound and good for the business and overall vision that you're trying to achieve. None were major obstacles, just regularly occurring challenges that you will always have with every project. For example, on the 1st May 2018 the new GDPR guidelines were released and published and this is something that isn't only relevant for us but for everybody in the market, everybody that does something on a digital level. Of course, you have to take things like that into consideration as well. Those are not considered grey areas, just things you have to deal with, evolving matters.

13. As the credit rating industry is well-known to be an oligarchy dominated by the Big Three, some scholars are suggesting that the only way to change this is through regulatory changes. Theories include the regulators selecting the agency, another includes them selecting the rating for investors to avoid conflicts of interest and also merit agencies on the quality of their ratings, others suggest encouraging the investor-pays model. What are your thoughts on that?

That's a tough one. I'm not entirely sure if I'm qualified to answer that to be honest, but the thing is, who regulates the regulator? If the regulator starts appointing credit agencies for different ratings and gain will-power, that shifts the power-base but also shifts the problem. Then we would have to fully believe that the regulator is 100% independent etc. As it turned out, based on the financial crisis that hit in 2008, the same principles have been put in place but distributed between different rating agencies, and as we al know the system was kind of flawed and didn't really work out. By shifting the power to yet another player… it's not up to me to decide whether it's going to work or not, but I do see the danger that we just prolong the problem. The easiest and best way to spread power responsibility and influence on the market is if we have more stable alternatives, and this is how the market can regulate itself. Right now, as I said, because we already have the players that basically put the market into an oligarchy, the best thing to go forward in my opinion is to break this up and make sure that there are enough alternatives. That doesn't necessarily have to mean just four rating agencies, but at least four or five, maybe even six that have a wider spread instead of focusing like 90% of all the ratings in the world just three different agencies.

14. While ESMA 'encourages' issuers to choose a second rating from an agency with less than 10% market share, it is not a legal requirement. Do you think this is a help or a hindrance to the company and its reputation?

It helps as long as we are under 10%! That changes once we become bigger, but at the time being it's just a recommendation, so it's not legally binding. I don't think it should be legally binding, it shouldn't be forced. This is something the market really regulates itself. If investors are crying out for different perspectives they want to see before they are willing to invest more capital, if they insist on seeing a different rating other than one of the three big ones, then it will become obligatory. Not because it's legally binding but because the market demands it. Basically, the law should follow the market and not the other way around. That's my personal opinion, otherwise we would have to question the entire system. Right now, if you take the system how it is right now, it is a system of self-regulation. Of course you have to say there are cornerstones in place in order to have rules that everybody has to follow, but if the market seems to shift towards another direction or it leans very heavily on one side, that usually means there's a high demand that something is missing. We do have very clever people, not only in the country but in the world that come up with clever ideas, and they will always be able to fill those gaps and close those gaps.

15. In what ways other than its geography do you feel Scope is an alternative to the Big Three? And do you think it will be enough in the end to challenge their dominance?

It's a different perspective, we use different methodologies. It's mostly about the understanding that if you look from a European perspective for example, that every 400km we have a totally, entirely different set-up, so you have to take this into consideration. There are different countries, smaller countries that work together and form a union, and I think this is going to be very interesting and important. If you look at ratings, especially in the European market, it makes a huge difference if it's an automotive rating for the German sector, or Italian sector, or Greek sector. There's going to be a huge difference. You can't just say "the American sector". Even though the USA is a very big country, because it's one country the perspective is whether you talk about the East coast or the West coast, it's still going to be very similar. Whereas in Europe, even if the distance geographically might not be that great, the outcome of the rating will greatly depend on which country is influencing it, and where they stand not only from a business perspective, but also from a political perspective etc. This is something that I think is a big game-changer for Scope as a rating agency. Also, the digital platform that we have talked about, the approach is quite unique, because the idea is to grant quick access to rating information and only charging based on the legal requirement given by ESMA, how you have to charge for ratings, but only charging for the products and services that investors actually subscribe from Scope. Instead of working with blended rates, standard fees etc. I wouldn't emphasise on the pricing model so much, I just think it is an important part of our strategy that we try to be as flexible as possible, I think this is the correct way to put it.

Appendix 18 – Interview 2 Transcript, 04.07.2018

1. Can you explain what your role in the project is?
I am a business analyst on the Scope One project. My role is to take the business requirements and turn them into specifications that the development team can work on. I am also a liaison between the business and technical teams, because obviously we have a lot of instances where the business side asks for something and technically it might take longer than expected, it might be too complicated. Sometimes I have to think about how beneficial it is to make it and then present other options; that's in a nutshell what I do.

2. At what stage in the project were you brought on board?
I came in when I joined the company, just over six months into the start of the project. I joined in June, a year ago. Exactly a year ago!

3. As I am not very familiar with the technical side of the project can you explain a little bit about the planning, processes and strategy of developing the platform?
On the development side we used the agile approach, so what we were supposed to do is every two weeks we produce an improvement to the product based on business needs or business requirements. At this stage, most of those requirements have been given by Florian (Schoeller) and when Participant 1 joined he was also taking over that bit as well. So, essentially what happens is Florian and Participant 1 would say these other things that we want to have in the product, then we take those - me and another business analyst - and we turn that into what we call 'user stories', which the developers then work from. In the user stories we explain what the feature that we need to develop is, how it should work, and then development team will also ask us different questions like "what if this doesn't work, what if that doesn't work". We enrich the stories based on that, and once we come to a consensus the development team actually start doing the coding. Once the coding is done, it's tested by a different team called 'quality assurance', they are also very technical and they test what has been implemented by the developers. Once that is done we have what we call a 'release', which is supposed to be every two week, then we have a review. So, because I am the one who consumes the requirements from Participant 1 and Florian, I then review these features and I say "yes, that's fine" or "no, that's not fine". But in reality, through those two weeks I get asked a lot of questions, so normally we wouldn't get to the review without me knowing certain things haven't been done exactly how it was required. Then, after the review we schedule a show-and-tell session with Florian and Participant 1 where we demonstrate the features that we've built so they can see the progress that has been made. We have to always bear in mind that maybe if they ask for something it's because it's conflicting with something else that has already been done, or it doesn't quite fit in with the current data structure that we have. We have to explain why things take, or one thing that normally happens is they might ask for something to work in one way and then I have to present a different option to suit the technology or skill set within the team.

4. Are you familiar with any IT processes that may have aided the development of Scope One or that can help the service maintenance?
Not the technical processes, I don't really know in terms of the deep processes. I know they do their development, they have to write their unit tests for their code, but because I don't have a developmental background I don't know the intricate details.

5. Was Scope One built from scratch or was a coding template used/was it built around an existing model? Was inspiration drawn from any other sources for features or functionalities?
It was built from scratch, obviously most people who work on the development are very experienced. So, they probably started off with some sessions where they talked about the best ways to do it, what is needed from the product and what's the best way forward. It is built from scratch, but highly informed with all the experienced people. Yes inspiration was drawn from other sources. And remember, when we have the show-and-tell it might be that when you show someone something they have already asked for, they might have more and more ideas. That's just how a product grows, it is natural.

6. What was the focal point of the IT side? Functional, usability, reliability, performance, security, supportability? Was there high product focus or service focus during the development?
I think the first pass is just to try and get something working and then you just build on top of that. The first thing would've been to sort of prove that it can be done, and then you build and build from there. The first thing is to develop a solid, semi-solid foundation. I think initially at this point it's more focused on the service, but as the product goes out it'll start to focus more on that a lot more, because what you'll have is people then actually using it and people who are giving you feedback; saying "oh I like this feature" or "I don't like this feature" etc.

7. During the building of Scope One were systems development and service management integrated or dealt with separately? Do you think this will/should continue?
At the moment it's still very much integrated, we are starting to try and get some people from the business to look after it but it's still in the very early stages, so we are having to carry on supporting them in that regard. I think it'll carry on being very heavily dependent on the development side for support, but then over time the business will be able to take

over the basic day-to-day running of the service; when I say "running of the service" I mean, things like registering customers etc, I'm not talking about technical problems.

8. There were a lot of resources put into the building of Scope One, for example personnel. Do you think there are sufficient or insufficient resources for a project of this magnitude?

I think that it was always a balance, I think the business would've liked the development to move faster, which doesn't necessarily mean the more people you have on a project, the faster it goes, because people need to understand the project, the product, understand what the vision is, understand what the business want from it. They also need to understand the technology, what it's built on etc, so I think there's that aspect of it. It's always going to take time, if they wanted it to move a bit faster then we could've had a few more people, but it's always a balancing act, because there are obviously budgetary things to consider, the infrastructure as well. If you have loads of people working, it means that you're using a lot of infrastructure, there's a lot to consider.

9. With so many variables, what do you think some of the biggest obstacles to overcome were?

I think the biggest obstacles were, because we work a lot with Florian, trying to get his time was difficult, also trying to understand the business itself because none of us have a ratings background, so we've had to try and understand how things are done and why they are done a certain way. There are many levels to that, which take a lot of time. There's also understanding the company; who is who, how is it structured - that also takes time. There's the bit about sort of educating a lot of the business users about how the development process works and why we need so much information upfront, and why we need to ask a lot of questions and why a lot of time needs to be invested in the process on the business side. There's all of that going on, obviously it's quite complicated, which you have to try and work through step by step.

10. As with all projects ideas change and new ideas evolve along the line, can you give some insight on how these ideas were managed and the decision-making process behind whether to immediately incorporate them or develop them later? How were priorities and expectations managed?

Normally what would happen is an idea comes up and then we're told "okay we want these five things", we then have to look at the application as it works today, look at what that requirement is and it's the role of the business analyst to then try and refine that idea; try and see "does this work just as it is, as requested by the business, does that fit into our existing framework?". If it doesn't it's our role to go back and do some negotiating or discussing, but if the business has a big driver maybe, as in 'you would get a big client if you did X', we would also have to consider changing parts of the framework to suit something. It's a balancing act again, you don't want to be changing direction or how you do something all the time so it can fit the business. There's also the other way where we have to educate them: "this is our framework, when you hold discussions you need to work within this framework". It goes from **idea** to having a **discussion**, then "let's try and **refine** this a bit more", and once its refined "what do we do next" and it moves on from there. The refining process isn't just a one-step process, it's a multi-step process.

11. From your professional opinion, is there anything that you would do differently?

Yes, I would probably try and imbed some of the business team into the development team so that they have a way of feeding into the process, discussing the process, or getting more of an understanding of how this works, or this is why it's happening a certain way etc. I would definitely do that differently.

12. From a technical perspective, what is the largest barrier to the success of the platform? What future challenges can be foreseen at this stage, if any?

A barrier might be if there are a lot of requests coming through, it's about the capacity of the ratings department because they've already got their schedule/timetable. A lot of requests coming through it's a case of trying to understand how it all works together, how do they manage to absorb this in their current working framework. In terms of success, I think people are starting to get more involved, so I think the more people that get more involved and the input we get, the more people will share ideas and I think we'll be in a good place. We'll have people who have really good market experience that maybe it can be done like this or like that, once we keep getting those ideas and they keep being refined it will really pay off. In the future, I can see we probably need to figure out how to structure the next phases of the development, so what are we focusing on next, which will be quite a challenge as there's going to have to be a balance between Business Development: "this is what we want to do, these are the features our clients are asking for" and then trying to balance that with maintenance issues, technology updates, any sort of business issues or style stuff. Once it's out there and people are using it there's going to be an expectation that we can turn changes around pretty quickly, so it's also about people understanding that it goes through a bit of a process, you might say an idea now but because of our development plans you might only get that feature in September for example. I can foresee that being quite a difficult conversation to have with people, trying to explain to people the reality is 'XYZ'.

Appendix 19 – Informed Consent Forms

Appendix 19.1 – Participant 1 Signed Informed Consent

Informed Consent Form

Informed Consent Form

Research Project Title :	"How can Scope utilise the critical success factors of Scope One to gain market share?"

Project Description : The project will explore project management and software development theory to identify critical success factors in agile projects. The factors will be analysed throughout the case study in order to assess which factors are critical to Scope One. The conclusion will be reached from seven sub-questions: what is a critical success factor?; how do critical success factors tend to change over a project's life cycle?; what management styles and approaches have been used throughout the project?; what are the assumptions and constraints of the project?; what are the external influences on Scope One's success?; what factors can contribute to agile projects being considered a failure?; what are stakeholder perceptions of project success?

If you agree to take part in this study please read the following statement and sign this form.

I am 16 years of age or older.

I can confirm that I have read and understood the description and aims of this research. The researcher has answered all the questions that I had to my satisfaction.

I agree to the audio recording of my interview with the researcher.

I understand that the researcher offers me the following guarantees:

All information will be treated in the strictest confidence. My name will not be used in the study unless I give permission for it.

Recordings will be accessible only by the researcher. Unless otherwise agreed, anonymity will be ensured at all times. Pseudonyms will be used in the transcriptions.

I can ask for the recording to be stopped at any time and anything to be deleted from it.

I consent to take part in the research on the basis of the guarantees outlined above.

Signed: _____ **Date:** 2 July 2018

Appendix 19.2 – Participant 2 Signed Informed Consent

Informed Consent Form

Informed Consent Form

Research Project Title :	"How can Scope utilise the critical success factors of Scope One to gain market share?"

Project Description : The project will explore project management and software development theory to identify critical success factors in agile projects. The factors will be analysed throughout the case study in order to assess which factors are critical to Scope One. The conclusion will be reached from seven sub-questions: what is a critical success factor?; how do critical success factors tend to change over a project's life cycle?; what management styles and approaches have been used throughout the project?; what are the assumptions and constraints of the project?; what are the external influences on Scope One's success?; what factors can contribute to agile projects being considered a failure?; what are stakeholder perceptions of project success?

If you agree to take part in this study please read the following statement and sign this form.

I am 16 years of age or older.

I can confirm that I have read and understood the description and aims of this research. The researcher has answered all the questions that I had to my satisfaction.

I agree to the audio recording of my interview with the researcher.

I understand that the researcher offers me the following guarantees:

All information will be treated in the strictest confidence. My name will not be used in the study unless I give permission for it.

Recordings will be accessible only by the researcher. Unless otherwise agreed, anonymity will be ensured at all times. Pseudonyms will be used in the transcriptions.

I can ask for the recording to be stopped at any time and anything to be deleted from it.

I consent to take part in the research on the basis of the guarantees outlined above.

Signed: Augusti **Date:** 4 July 2018