



Cape Peninsula
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**THE BENEFITS OF CONTRACTUAL CLAUSES IN MITIGATING PROJECT
FAILURES USING BUSINESS SYSTEM PROJECTS**

by

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ABSTRACT

This study evaluates the utilisation and effectiveness of contract clauses in Information Technology (IT) and Information System (IS) projects in South Africa to address and mitigate key risks associated with these types of projects. This study established whether specific clauses were being utilised to address key risks, and where clauses were being utilised, whether these clauses were effective in addressing and mitigating the impact of these key risks. The need for the study arose because the researcher had experienced on several occasions in his workplace that contracts which appeared fail-safe during the negotiation stage did not reach the proposed targets, let alone maturity of the agreement. To establish whether colleagues in similar positions in computer-based organisations experienced similar disruptions a quantitative questionnaire was distributed to organisations in the Johannesburg area to gain an insight into their risk profile. Risk could arise from the contract construction and/or wording. Reference was made to the contracts in the engineering environment where standard contracts have been in place for a number of years. Specifically the New Engineering Contract (NEC) of 2011 and the Professional Services Contract were consulted. The study concentrated on four categories of risk identified in a literature review, namely corporate management risk, project management risk, resource utilisation risk and technology risk, which resulted in 42 sub-factors examined. The population of suitable and relevant IT and IS companies could not be definitely established but the researcher made telephonic contact with known organisations and 24 participants agreed to participate in the exercise; 12 service providers and 12 clients of providers, where 78% of participants experienced one or more of the risk factors, and 53% used NEC standard contracts.

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1. INTRODUCTION

1.1 Purpose of the research

The purpose of this research was to evaluate the utilisation and effectiveness of contract clauses in Information Technology and Systems (IT-IS) projects in South Africa to address and mitigate the key risks associated with these types of projects. This report indicates whether specific clauses are being utilised to address key risks and, where clauses are being utilised, whether they are effective in addressing and mitigating the impact of these key risks.

1.2 Context of the research

During the analysis of statistics on the failure rate of Information Technology projects it became apparent that a large number of Information Technology projects fail or have significant challenges (Standish Group, 2009a). The Standish Group, (international IT-IS consulting group) compiles a report on IT-IS project success and failure globally, known as the 'CHAOS Report'. In Table 1.1 the 2009 CHAOS Report statistics for projects in general are indicated.

Table 1.1: Project Success, Failure and Challenges (Standish Group, 2009a)

Year	2008	2006	2004	2002	2000
Succeeded	32%	35%	29%	34%	28%
Failed	24%	19%	18%	15%	23%
Challenged	44%	46%	53%	51%	49%

Table 1.1 indicates clearly that there was no significant shift in the number of successful projects between 2000 and 2008.

A further analysis by the Project Management Institute (PMI, 2008:273) into the reasons for project failures signifies that project failures relate directly to project risks. In this regard, the definition of project risk management reads as follows:

Project Risk Management includes the process of conducting risk management planning, identification, analysis, response planning and

monitoring on a project. The objectives of Project Risk Management are to increase the probability and impact of positive events, and decrease the probability and impact of negative events in the project (PMI, 2008:273).

Based on this definition of project risks it can be reasonably deduced that project failures and challenges do stem from project risks.

The basis on which parties engage with each other is defined in the agreement between these parties. The binding agreement between parties is the contract between them. Contracts allow for clauses to be added that address specific issues and/or risks which may be encountered during the completion of the contract deliverables. As the contract is the only binding agreement between the parties and serves as the reference should disputes arise, it would be expected that risks specific to the activities of the contract would be clearly defined in the contract clauses (PMI, 2008).

Effectively managing project risks by utilising contract mechanisms should reduce the challenges as well as the rate of project failures currently taking place. Based on the statistics in Table 1.1 it is evident that this is not the case.

In the engineering environment standardised contracts exist which are specifically designed for engineering contracts. Examples of such contracts being utilised in South Africa are the Federation Internationale des Ingenieurs-Conseil (FIDIC) Suite of contracts (Construction Industry Development Board, 2005) and the New Engineering Contract 3 (NEC3) Suite of contracts (Gerard, 2005). These two standard contracts types have been developed over many years and are continuously updated to incorporate changes in engineering as well as standard project practices in engineering.

On the contrary, no such standard contracts exist for Information Technology or Information Systems projects. The standard practice within many larger organisations is to utilise some of the standard Engineering contracts (New Engineering Contract [NEC], 2011) such as the NEC Professional Services Contract (NEC PSC) and then to attempt to add clauses to it to accommodate Information Technology and Information Systems projects.

The purpose of this research was to evaluate the utilisation and effectiveness of contract clauses in Information Technology and Systems in South Africa to address and mitigate the key risks associated with these types of projects.

1.3 Problem statement

Because of the absence of specific contracts for the Information Technology or Information Systems industry the element of risk for contract failures is considerable.

The focus of the main problem is to establish an understanding of the utilisation and effectiveness of contract clauses to address and mitigate key Information Technology and Information Systems project risks in South Africa.

1.3.1 Sub-problem 1

The first sub-problem is to analyse the adoption or utilisation of contract clauses to specifically address key risks.

1.3.2 Sub-problem 2

Secondly, to analyse the specificity of IT-IS contract clause utilisation that contributes to the successful mitigation and/or resolution of key risks in projects.

1.4 Study aim and objectives

The aim of the study is to investigate contractual clauses in business systems projects, so as to eliminate identified risk factors which impact on the success of the project.

The study objectives flowing from the identified study problem and aim are:

- To investigate in detail contracts used in the IT and IS industry.
- To identify any risk factors that could impact negatively on these contracts.
- To establish whether any correlation exists between contract clauses and the utilisation of such clauses to resolve issues.
- To statistically argue such risk factors in support of solutions to avoid contract failures.

1.5 Significance of the research

This study fills a gap in that currently no significant research exists regarding the effectiveness of the utilisation of contract clauses in the Information Technology and Information Systems project environments. Although numerous research studies focusing on project risks (Schmidt et al., 2001:5-36) have been conducted, the researcher was unable to find literature linking the successes or failures of risk management on projects to contract types and clauses utilised, specifically in South Africa.

This research provides information to individuals and organisations involved in Information Technology and Information Systems projects in South Africa that will assist them with the selection of clauses to utilise in IT-IS project contracts.

1.6 Delimitations of the research

In this research a specific set of key project risks are addressed and it was investigated whether these risks have been addressed or not through the utilisation of specific contract types and contract clauses.

This research is limited to projects in South Africa and focuses on the utilisation and effectiveness of contract clauses used in contracts to address project risks. It does not address the methodology of formulating contract clauses or the technicalities around the wording used in these clauses.

1.7 Definition of terms

The following terms and definitions are used specifically for this study and are not necessarily applicable to all contracts:

- **Clause** – a clause is the smallest grammatical unit that can express a complete proposition.
- **Client** – the company initiating a project or requiring services to complete IT or IS related activities.
- **Contract** – a voluntary, deliberate and legally binding agreement between two or more competent parties.

- **Information Technology (IT)** – the branch of engineering that deals with the use of computers and telecommunications to retrieve, store and transmit information.
- **Information Systems (IS)** – any combination of information technology and people's activities that supports operations, management and decision making.
- **Project** – an individual or collaborative enterprise planned and designed to achieve an aim.
- **Project Management** – the Project Management Body of Knowledge (PMBOK) defines a project management as “the application of knowledge, skills, tools, and techniques to project activities to meet the project requirements” (Project Management Institute, 2008:6).
- **Project success** – based on the definition above for project management, a project can be deemed successful if the project meets the project requirements. These requirements are set as part of the project definition and specific contract needs, and can include factors such as time, budget and project performance.
- **Risks** – risks in IT-IS projects are defined by Schmidt et al. (2001:6) as “the product of uncertainty associated with project risk factors and the magnitude of potential loss due to project failure”. This definition was deemed appropriate as it assists in indicating the relationship between project risks and project risk factors.
- **Supplier** – an entity operating within the IT and/or IS fields supplying goods or services.

1.8 Assumptions

The assumptions made with regard to this research are indicated below.

- The respondents would respond in an unbiased way indicating actual outcomes and not perceived or aspired outcomes.
- The total number of respondents would be adequate to ensure the statistical validity of the research. Finding willing respondents with the required experience and mandate to share this type of information would be challenging.

- The respondents have to have adequate experience and involvement with contracts and contract clauses as well as projects to be able to link the contract clauses to project success or failure.
- The research only includes respondents who willingly shared the required information. Although all attempts were made for them to be representative of South African IT and IS projects as a whole, no tests were conducted to confirm this representatively.
- Although the detail around measures utilised by respondents to accurately define project success, challenge and failure might vary slightly, this would not influence the validity of this research.
- The literature review included international case studies and statistics. The assumption was made that these would hold true for the South African context to the degree that the information obtained could be used as a baseline to highlight the risks and issues to be investigated.

2 LITERATURE REVIEW

2.1 Introduction

In this section information derived from the literature review on key themes which have relevance to this research is provided. The literature review focuses on finding elements which could be analysed in terms of its utilisation and effectiveness of contract clauses, and is primarily limited to identifying the risk factors which could/did influence the validity of service contract. This narrow search is also due to the fact that the study is a mini-dissertation in support of taught modules already completed.

2.2 Background

Because of the nature of the study journals and reports formed the basis for the literature review. A number of studies (Standard Group (CHAOS Reports), 1995; 2009a; 2009b; The Robbins-Gioia Survey, 2001; The KPMG Canada Survey, 1997; The OASIG Survey, 1995) indicate that project failure rates are extremely high. Previous failure rates indicated in these reports are:

- **CHAOS Report, 2009:** 24% of projects were cancelled before completion and 44% of projects indicated significant time and cost overruns.
- **CHAOS Report, 1995:** 31.1% of projects were cancelled before completion and 52.7% of projects showed significant time and cost overruns.
- **Robbins-Gioia Survey, 2001:** 51% of the respondents viewed the implementation of an Enterprise Resource Planning (ERP) system project as unsuccessful.
- **KPMG Canada Survey, 1997:** Over 61% of the projects analysed were deemed as failed (Kappelman, McKeeman & Zhang, 2006:31-36).
- **OASIG Survey, 1995:** Findings were that seven out of 10 projects failed in some respect.

These reports attempted to analyse the risk elements which related to the failure(s) of the projects but in their analysis of risks and risk factors the focus was on the study area and was not exhaustive. Kappelman et al. (2006:31-36) completed a

detailed risk analysis study which highlights more than 50 risk factors while the categorisation of risk factors (Schmidt et al., 2001:5-36) shows that these risks factors can be categorised into at least 14 generic project related categories.

Further analysis of these risks factors and categories indicate that they can be sufficient as guidelines but cannot be utilised in a research conducted on the utilisation and effectiveness of contract types and clauses.

2.3 Risk factor identification and categorisation

Risks in IT-IS projects have been defined as "...the product of uncertainty associated with project risk factors and the magnitude of potential loss due to project failure" (Schmidt et al., 2001:6). The key items which therefore contribute to and which can be controlled are the project risk factors (Schmidt et al., 2001:7). In line with the perspective of March and Shapira (1987:1404-1408), Schmidt et al. (2001:7) further define a risk factor as "...a condition that can present a serious threat to the successful completion of a software development project".

For the purpose of this research the risks factors and categorisations as stated in Section 2.2 under the heading 'background' have been re-worked into the categories and risks factors set out next.

2.3.1 Corporate management related risk factors

2.3.1.1 Lack of commitment from top senior management

The issue of lack of commitment from top senior management is raised by Schmidt et al. (2001:5-36) while Holt (2003:1-4) recommends that a project sponsor should be appointed at a senior level in the organisation. This project sponsor must be actively involved in the project and have the full support of the top management in the organisation. Although many client companies employ project sponsors, the utilisation of sponsors from suppliers is questionable.

2.3.1.2 Corporate instability and/or organisational change causing instability in the project

Corporate change could cause changes to project requirements as well as support for the project within the organisation (Schmidt et al., 2001:5-36). From the supplier's perspective, these types of changes could lead to a de-prioritisation of the project. As a method to allow both parties to disengage or escalate without one

adversely affecting the other, parties need to agree to amiable ways to handle these changes.

2.3.1.3 Lack of client ownership or de-prioritisation of the project

Written commitment from the leadership and top management of the client organisation is required (Kappelman et al., 2006:31-36). Without this formal commitment the risk for de-prioritisation of the project and abandonment due to increased costs or risks becomes a significant factor. The contract between the supplier and client should include this written commitment.

2.3.1.4 Lack of supplier ownership or de-prioritisation of the project

The client relies on the binding contractual agreement and commitment from the supplier for continued management commitment and prioritisation of the deliverables (Natovich, 2003:409-419). Changes in the supplier's organisation could, however, lead to the de-prioritisation of the project regardless of contractual obligation.

2.3.1.5 Adversarial relationships and loss of trust between vendor and client

The successful completion of projects requires a level of trust between the supplier and the client. This level of trust is normally built over a period of time. For initial contact between the client and the supplier, the basis for the relationship is usually defined within the contractual agreement between parties (Sabherwal, 1999:80-87). According to Ryall and Sampson (2009) prior experiences between parties tends to lead to more detailed contracts, and also a more frequent invocation of penalty clauses. Research shows that communication and understanding each other's company culture are fundamental to building a trust relationship between companies.

According to Winters (2002), cultural conflict between organisations has a significant effect on the probability of project failure. For this reason, maintaining communication and cultivating a cultural understanding rate as key contributors to establishing and maintaining trust (Nguyen et al., 2006:624-627).

2.3.1.6 No formal alignment of project with business strategy

Projects need to remain aligned with corporate objectives (Dinsmore, 1999:1). Should a misalignment arise, the project may be deemed a failure even if it has delivered on all stated requirements. The client and the supplier need to understand the dynamics of the environment where the project will be implemented. The

agreement between parties must take these dynamics into account and flexibility needs to be built into the agreement that allows for an appropriate level of flexibility within the project to adapt to the environment.

2.3.1.7 Communications breakdown between parties involved

Communications breakdown between the parties involved is raised by May (1998:9-12) as a key risk factor. Due to the contention of success criteria or over commitment, communications between parties may become strained or even break down completely (Kappelman et al., 2006:31-36; Wallace et al., 2004:289-321). It may cause both parties to revert to arbitration or litigation which will negatively impact project success. The agreement between parties should clearly describe the methods of handling communication and escalation with a variety of options available before entering into arbitration and litigation. The research conducted by Goo, Kishore, Roa and Nam (2009) emphasises that the parties must create mechanisms to address communication break-down issues, and that *formal* contracts can be utilised to achieve this.

2.3.2 Project management risk factors

2.3.2.1 Functional requirements not documented or unrealistic

The functional requirements of the system form the core of expected delivery from key stakeholders (Winters, 2002). Should this not be complete and detailed, the risk of change and not meeting customer expectation is increased. This in turn puts the perceived project success at risk. Should the requirements not be accurate and complete at the outset of the project, both parties need to agree to the process and timeframes associated with completing these to an acceptable level.

2.3.2.2 Performance requirements not documented or unrealistic

Performance requirements not documented or unrealistic are other key risk factors raised by Winters (2002). Jones (2004:8) states “(E)ffective software quality control is the most important single factor that separates successful projects from delays and disasters.”

One of the key mechanisms utilised in quality control is performance measurement and testing. A system may have all specified functionality completed but if this functionality does not perform at a rate acceptable to the client it will be deemed a failure. Therefore, performance metrics need to be quantified and agreed to by the

parties before the design phase of the project as this will affect all elements of the project – from design and build through to testing methodology. All parties should accommodate some movement within the contract for change to stated performance requirements, especially in cases where it may become apparent that the stated requirements are beyond the ability of the systems and infrastructure to deliver. Recipients of IT-IS services (clients) should be particularly vigilant that supplier-contracts do not contain unnecessary clauses disadvantaged to the client (Clemons & Chen, 2011:1-10).

2.3.2.3 Reliability requirements not documented or unrealistic

Another key mechanism to control project quality is based on system reliability. As with performance requirements, these reliability requirements need to be defined at the outset and the parties have to build in mechanisms to allow for acceptable changes to these throughout the lifecycle of the project (Winters, 2002).

2.3.2.4 Project scope not documented or partially documented

The project scope not being documented or partially documented is raised by Winters (2002) as a key risk factor. The project scope aligns closely with the project charter as well as the definitions of functional requirements and quality management; it encapsulates all the requirements which may not be stated within any of the other specifications and may highlight latent risks to the project.

2.3.2.5 Ineffective or poorly trained project managers

The problem of ineffective or poorly trained project managers is raised by Schmidt et al. (2001:5-36) as a key risk factor. The role of the project manager is pivotal to the success of the project; in all capacities including technical, business and change management (Skok, 2001:189-197). It is therefore critical that the parties agree on the selection processes for project managers and how succession will be effectively mitigated should a change of project managers occur.

2.3.2.6 Inadequate or non-functional change control process

A lack of adequate change control is a sign of an environment still in the Initial Process of the Process Maturity Levels (Humphrey, 1987:3-9). The Initial Process is the lowest level of the Process Maturity Levels and indicates that no orderly progress in process improvement is possible. Both parties need to understand the maturity level in the other's organisation and the project delivery and risk categorisation should be defined around these levels.

2.3.2.7 Not well-defined or lack of defined deliverable and associated deliverable dates

Not well-defined, or the lack of defined deliverable and associated deliverable dates, are defined by Kappelman et al. (2006:31-36) as a key risk factor. Although different methodologies place the level of detail required for deliverable definitions at varying stages in the project (Schwaber, 1997), all methodologies require definition of deliverables and associated deliverable dates. The agreement between the parties must therefore clearly address the expected deliverables and allowed timeframes for delivery.

2.3.2.8 Criteria defining project success inadequate or undefined

The criteria for defining project success inadequate or undefined are regarded by Kappelman et al. (2006:31-36) as a key risk factor. Covey's (1989:45) statement to "... begin with the end in mind" attests that all parties should be fully aware of what the exact qualitative and quantitative measures are that need to be met for the project to be deemed a success. This is further supported by Susarla and Subramanyam (2010:37-55), who state that '... well-crafted contractual provisions can decrease the problems posed by a lack of measurability in outcomes'. Due to changes during the project, the agreement between the parties must accommodate a level of change within these measures and a process must be defined on adjusting these measures in a way agreeable to both parties.

2.3.2.9 No business case for the project

No business case for the project is highlighted by Kappelman et al. (2006:31-36) as a risk factor. The business case is the link between the project and the business and highlights the business drivers or expected benefits from which the project originated (Kappelman et al., 2006:31-36). The business case defines the need for the system(s) in terms of the business needs of the organisation (Whittaker, 1999:23). One of the three main reasons why information technology projects fail can be directly related to a poor business case (Whittaker, 1999:27). Although the client may in most cases not present the business case to the supplier, it is still important for the supplier to understand the business drivers behind the project. The alignment of these business drivers with project delivery must be clearly defined in the agreement between parties.

2.3.2.10 No project status tracking or progress reporting

No project status tracking or progress reporting is emphasised by Havelka et al. (2004) as a key risk factor. One of the key processes required for an organisation and project to grow in the Process Maturity Levels is well-defined status tracking and progress reporting (Humphrey, 1987:3-9). Status tracking and progress reporting should be transparent and information from the supplier must be freely available to the client organisation. Non-sharing of this information becomes a risk factor, specifically in turnkey projects. The agreement between parties must state the expectations around status tracking and progress reporting and the methods to be utilised to distribute this information between them.

2.3.2.11 Risk management, analysis and tracking not in place or inadequate

Risk management, analysis and tracking not in place or inadequate is a key risk factor raised by McKeeman (2001). In engineering projects, risk management has been identified as a key success factor on projects. Boehm and DeMarco (1997:18) assert that, due to the risky nature of IT and IS projects, adequate and efficient risk management is critical. Both parties to the agreement must understand and approve of the risk management and tracking processes put in place by the other. The standard for managing and tracking risks must be clearly defined in the contract.

2.3.2.12 Delivery deadline not aligned with project schedule or project schedule calculated based on delivery deadline and not effort required

Delivery deadline not aligned with project schedule or project schedule calculated based on delivery deadline and not effort required is raised by Kappelman et al. (2006:31-36) as a further key risk factor. Due to time constraints on projects, many projects are scheduled backwards from the delivery date rather than according to the time required to complete the activities. The agreement between parties must allow for both parties to be able to request and adjust deadlines to align with actual expectations.

2.3.2.13 Management of project delays, revision of project based on delays encountered

A key indicator for projects at risk of failure is the number of deliverable due dates missed within the first 10% of the project schedule (McKeeman, 2001). The process and method of addressing delays must be clearly defined within the agreement between parties and should be vigorously enforced from project go-live. Minimising

delays within the first 10% of the project will significantly enhance the probability of success for the project (McKeeman, 2001).

2.3.2.14 Documentation on planning and estimation lacking or inadequate

Documentation on planning and estimation lacking or inadequate are raised by Jones (2004:6) as key risk factors. The documentation on the methods utilised to arrive at project estimates and plans need to be clearly defined. Due to the inherent risk of technology projects, the methods of calculation as well as the actual calculations should be available to all parties. Transparency in these calculations will allow parties to understand the levels of risk as well as the slack/buffer built into the estimates.

2.3.2.15 Significant changes to the project, including scope schedule or goals

Significant changes to the project, including scope schedule or goals, is raised by Boehm (1991:32-41) as a key risk factor. Requirement changes of any type increase the risk of not achieving the desired outcome for a project. These changes can be attributed to a variety of factors that include changes in business and customer expectations (Tiwana & Keil, 2004:76). Requirement changes require good project governance (Sauer et al., 2007:79-84) to enable project success. The risk to suppliers is that requirement changes may increase the risk of the project to an unacceptable level, yet the supplier may not be in a position to reject these changes. The client and the supplier need to agree at the start of the project on a governance model which will be utilised to accommodate requirement changes. This model should include options for the supplier to reject unacceptable changes without significant repercussions.

2.3.2.16 Roles and responsibilities of team members are not clearly defined

The roles and responsibilities of team members not being clearly defined are raised by Jiang et al. (2002:30-41) as further key risk factors. Defined roles and responsibilities lead to harmonised relationships on projects which in turn lead to greater commitment from project team members resulting in a more productive workforce (Patterson et al., 2003:5). A clear understanding of the roles and responsibilities of all staff within each organisation (client and supplier organisations) as well as between the parties is required and should be defined prior to any individual commencing activities.

2.3.2.17 Project communications lacking or not defined, including planning and resources

Project communications lacking or not defined, including planning and resources, is another key risk factor stated by Kappelman et al. (2006:31-36). Continuous communication of project expectations and perceived deliverables is critical to the final acceptance of the project as a success. The responsibility for communication and allowable standards of communication must be clarified and finalised between parties at the contracting stage of the project.

2.3.2.18 Project management methodology not properly implemented or not being used at all

Project management methodology not properly implemented or not being used at all is raised by Schmidt et al. (2001:5-36) as a key risk factor. The complete lack of or utilisation of inappropriate project methodologies places projects at greater risk and can lead to requirements not being met (Tiwana & Keil, 2004:74). Although the superiority of methodologies can be debated, it is clear that no single methodology is optimal for all types of projects. Methodology selection is related to the one most suited to a specific project rather than finding a single optimal methodology (Tiwana & Keil, 2004:75). Both the client and the supplier must agree on either a methodology or method of methodology selection at the outset of the project.

2.3.2.19 Project charter not created or incomplete

The project charter not created or incomplete is raised by Kappelman et al. (2006:31-36) as a key risk factor. The Project Management Body of Knowledge (PMBOK) defines a project charter as “a document that formally authorises a project or a phase, documenting initial requirements that satisfy the stakeholder’s needs and expectations” (Project Management Institute, 2008:73). This document should form an integral part of the agreement between the client and the supplier and be the base of the understanding of project delivery.

2.3.2.20 Key project deliverables are outside the locus of control of the project team

Key project deliverables that are outside the locus of control of the project team is a key risk factor raised by Kappelman et al. (2006:31-36). Although key project elements such as budget, scope, schedule and quality are normally required to be ratified by entities outside of the project, these key elements must remain inside the control of the project after this ratification process has been completed. The method

of implementing this requirement with the contract between parties will assist both parties to have control over the impact of change.

2.3.3 Resource related risk factors

2.3.3.1 Commitment and belief of project team members in meeting the project scope within schedule are low

Schmidt et al. (2001:5-36) observe the commitment and belief of project team members in meeting the project scope within schedule as low; consequently, they see this as a key risk factor. Experience of resources on projects allows the project team members to have an understanding of the expected scope delivery within the time limits. It has been found that if the resources perceive the scope or schedule requirements as unrealistic, the team members do not believe it and a reduction in commitment from resources is experienced. The client and the supplier need to agree on qualitative measures to be utilised; they have to inform team members thereof to align the scope with the timeframes of the project. These agreements should be included in the contract between the two parties.

2.3.3.2 Key stakeholders are unavailable or only have limited availability for review sessions of project

Kappelman et al. (2006:34) state there are "...always more demands for resources than there are resources available". Therefore, it is apparent that if key stakeholders are not fully committed the project will not obtain the resources required to successfully complete the project. Both the client and the supplier need to state the key stakeholders and resources at the outset of the project; both further have to commit to ensure that these resources will be fully available to the project for the duration thereof.

2.3.3.3 Skills, knowledge or experience of resources on project team is lacking

The issue of the lack of skills, knowledge or experience of resources on project teams is raised by Barki et al. (2001:37-70) as a key risk factor. Although technical skills is critical to the delivery of IT and IS projects, and must be specified in the contract between parties, the training and skills of the project manager/s in these projects are often overlooked. Experience of the project managers on projects of similar scale and complexity should be a prerequisite from both the client and the supplier.

The ability of resources to keep up to date with the continuous change in the IT and IS environments must also be addressed between parties to allow resources to maintain relevant and current knowledge.

Experience of resources on the technology is critical to the success of a project (Schmidt et al., 2001:5-36). It is therefore vital that resources with the necessary experience are defined upfront and maintained throughout the duration of the project.

2.3.3.4 Project resources are only partly assigned or become fully assigned to another project which is deemed of higher importance

Project resources that are only partly assigned or become fully assigned to another project which is deemed of higher importance is seen by Havelka et al. (2004) as another key risk factor. Where project team members are not fully assigned to a single project it often occurs that team members become overscheduled. This overscheduling is rated as one of the key risk factors to successful project completion (Schmidt et al., 2001:5-36).

2.3.3.5 Overscheduling of subject matter experts

Overscheduling of subject matter experts is raised by Kappelman et al. (2006:31-36) as a key risk factor. Subject matter experts, especially in the client organisation, are required for input to key project deliverables. If these subject matter experts are not released from their normal day to day activities (which could take up to 100% of their working time), these resources become overscheduled and create bottlenecks in the project progress.

2.3.3.6 Timely review and sign-off on decisions, deliverables and documentation

Timely review and sign-off on decisions, deliverables and documentation is raised by Kappelman et al. (2006:31-36) as a key risk factor. Delays in decisions from project stakeholders may cause due dates to be missed and have a significant impact on the project schedule. A controversial issue in larger projects is related to the timeous sign-off on deliverables and documentation. The contract between parties must address allowable timelines for documentation and deliverable review and immediate escalation on deviation from this agreement must be enforced.

2.3.3.7 Willingness of users (end-users of the system) to be involved in and co-operate with the project

Insisting on the inclusion of key stakeholders within the user community to sign-off on the project charter is one of the first requirements in obtaining user buy-in. A supplier should ensure that adequate user involvement and commitment is guaranteed by the client. The balance of requirement from the client will be to insist that the supplier scheduling is such that adequate lead time can be given to users to allow them to schedule involvement around their existing commitments.

2.3.3.8 Limited user involvement due to capabilities in new systems being vastly different from existing systems

Limited user involvement due to capabilities in new systems being vastly different from existing systems is observed by McFarlan (1982:12-19) as a key risk factor. In many cases newer technology varies from older technology to the extent that users of the old technology require extensive training before being able to utilise the new technology (Wallace et al., 2004:289-321). This places a risk on the supplier and an obligation on the client to ensure that sufficient staff numbers who use the system are kept up to date with the technology to ensure project success.

2.3.3.9 Support teams and users perceive new system as a threat

Support teams and users perceive new system as a threat; this is a key risk factor raised by Jiang et al. (2002:30-41). In agreement, Seligman (1990:2) makes the following perceptive statement: "Despite equal talent and drive, it turns out that optimists will succeed where pessimists fear to tread."

For a large portion of the population the normal reaction to change is an aversion to it. The more aversion to change exists, and regardless of how well the project delivers have stipulated the criteria, the larger the risk for the supplier to achieve the perceived success of the project will be. Therefore, the supplier must understand and be involved in the process of change management to address concerns and issues of support teams and users.

2.3.3.10 Motivation and maintaining morale of team members throughout a project

Not only motivating but also maintaining the morale of team members throughout a project are, according to McKeeman (2001), further key risk factors. Team motivation and morale become significant risks on longer and more complex

projects. The morale risks vest with the supplier as well as the client and both parties should acknowledge this risk factor and define mutually acceptable processes to mitigate it.

2.3.3.11 Turnover of key project team members through the project lifecycle

Turnover of key project team members is one of the risk factors which may have the single largest impact on the project (Krym, 2009; Schmidt et al., 2001:5-36). Resource retention strategies must be defined by both the supplier and the client and these must be stipulated in the agreement. Non-adherence to resource retention must be closely monitored and effectively escalated.

2.3.4 Technology related risk factors

2.3.4.1 Implementation of new or latest technology

The inherent lack of experience related to leading edge technologies places any project utilising these technologies at great risk (Schmidt et al., 2001:5-36). Experience with the technology allows resources to pre-empt a variety of risks such as incompatibilities between different systems or technologies. It is advisable that any contracts around leading edge technologies should acknowledge the risk factors associated with these technologies and encapsulate clauses to reduce the impact of these risks to both the client and the supplier.

2.3.4.2 Availability and capacity constraints on technical communications infrastructure

The majority of projects require a communications network infrastructure to support the effective and efficient operations of the solution (Kliem, 2004:22-28). In many cases the instability or constraints in the communications network infrastructure affects the perceived performance and reliability of the solution. The onus is on the supplier to accurately calculate the communications network infrastructure requirements and on the client to ensure its availability.

2.3.4.3 Technical complexity

Most IT and IS projects are interdependent on other IT or IS systems (Tiwana & Keil, 2004:76). This complexity increases with any associated increase in project size and duration (Sauer et al., 2007:79-84). The risk faced by the client and the supplier is that of being able to balance the complexity of change with the associated amount and duration of change.

2.3.4.4 Goldplating

The act of adding additional functions or features of requirements to the system is referred to as 'goldplating'. Goldplating can cause project teams to lose focus of the actual critical delivery items and spend time and effort on unneeded or less important items at the cost of core functionality (Wallace et al., 2004:289-321). The contractual agreement between parties should include a prioritisation of functions and features thus allowing both parties to ensure an optimal chance of project success.

2.4 Conclusion of literature review

The literature review identified a significant number of project risk factors for which mitigating actions can be defined in the contract between parties. The existing implementation of contract clauses to mitigate these risk factors remains unclear, and no references to specific clauses could be found in reliable literature. Existing clauses are designed solely for engineering projects and, although they relate to IT and IS projects, may not be the best options for mitigating risk factors in IT and IS projects.

3 RESEARCH METHODOLOGY

3.1 Introduction

The objective of this research was to gain an understanding of how South African IT and IS companies address IT and IS related project risk-factors with specific contract clauses. Due to the lack of well documented information around dealing with contracts and contract clauses for IT and IS projects in South Africa, the research conducted was partly exploratory.

3.2 Research methodology and design

The methodology for the research made use of a quantitative approach using in-depth questionnaires to obtain information from industry expert stakeholders.

The questionnaires comprised of closed-ended questions nominally scaled to facilitate the standardisation of responses and allow for primarily a quantitative analysis, but did allow for open-ended explanations and comments.

The questionnaire addressed each of the risk factors highlighted in the four categories, as defined in the literature review, and listed as follows:

Category 1: Corporate management related risk factors: 7 risk factors

Category 2: Project management risk factors: 20 risk factors

Category 3: Resource related risk factors: 11 risk factors

Category 4: Technology related risk factors: 4 risk factors.

There were 42 risk factors in total. The number of questions per risk factor were standardised to seven questions. (For clarity purposes the following applied to the answers: 'Y' represented 'Yes'; 'N' represented 'No'; 'NA' represented 'Not applicable').

- Have you encountered project risks related to this item? (Y/N)
- Were there contract clauses in place to specifically address this item? (Y/N)
- Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other)

- Were the contract clauses standard or were they customised for the project and/or company? (Standard/Custom).
- If clauses were in place, were these generic or specifically related to Information Technology/Systems (IT-IS) projects? (Generic/IT-IS/NA)
- Was it ever required to invoke these clauses? (Y/N/NA)
- If these clauses were invoked, was this action successful in resolving the issues encountered? (Y/N/NA)

This approach provided 294 data elements per questionnaire. Based on the 24 responses this provided a total of 7 056 data elements that were analysed using correlation coefficient calculations to provide the results. The conclusions of this research are based on these results. It is important to note that in all the tables following the response 'NA' in the first column that reflects the questions contained in the questionnaire, is indicated as NA without the slant or oblique (/). This was purely done to simplify understanding and make a definite distinction between 'Yes' represented by a 'Y', 'No' represented by an 'N' and 'Not applicable' by 'NA'.

A correlation coefficient calculation is "... a statistic representing how closely two variables co-vary; it can vary from -1 (perfect negative correlation) through 0 (no correlation) to +1 (perfect positive correlation)" (The free dictionary, <http://www.thefreedictionary.com/Pearson's+r>).

For the purpose of this research the Pearson product-moment correlation coefficient (r) formula (also known as Pearson r Test) was used. The formula for the Pearson r test is shown in Equation 1.1.

$$r = \frac{\sum_{i=1}^n (X_i - \bar{X})(Y_i - \bar{Y})}{\sqrt{\sum_{i=1}^n (X_i - \bar{X})^2} \sqrt{\sum_{i=1}^n (Y_i - \bar{Y})^2}}$$

Equation 1.1: Pearson correlation coefficient (r)

The Pearson correlation coefficient measures the linear correlation between two variables (or two sets of variables). Due to the linear relationship between the variables in this research, a product-moment coefficient was best suited to the analysis of the results. Other correlation coefficients such as interclass or rank

correlations would also yield results but are not specific to providing the optimal results for datasets with linear relationships.

3.3 Population and sample

3.3.1 Population

The population for this research was senior members of companies involved in the delivery, management and contracting of IT and IS related projects in South Africa. The population encompassed both companies which primarily provide services and solutions (suppliers) as well as companies primarily requiring services and solutions (clients). The population was partly exploratory and also referred to international experiences. The total population of relevant individuals in South Africa was estimated by the author to be between 300 and 400 at the time the current research was conducted.

3.3.2 Sample and sampling method

Senior staff members of companies were selected based on their experience (number of years in senior positions in IT-IS; academic qualifications in IT-IS, and word-of-mouth on expertise among colleagues) in and knowledge of IT and IS projects. Initial contact and introductions to these individuals were made verbally to request their participation in this research. Individuals who indicated willingness to participate received their instructions as well as the questionnaire via e-mail. All participants were expected to complete the questionnaire electronically and also return the completed questionnaire via e-mail.

All sampling was conducted in accordance with the requirements and regulations of the Cape Peninsula University of Technology. The researcher protected the anonymity and confidentiality of all the participants, and no harm came to any person or company or other entity either directly or indirectly through this research. In line with the confidentiality and anonymity requirements and regulations, the names of the individuals are not divulged in this research.

3.3.3 Impact of delimitation, population and sampling on the research

The individuals who had the expertise to provide relevant input were all IT experts who managed, or had managed large IT projects in South Africa. They were familiar

with contracting methodologies and had used contracts and/or specific contract clauses to address risk factors in projects.

The population of experts with this type of knowledge and experience is quite limited in South Africa. These individuals are in high demand and obtaining feedback for research studies from them is extremely challenging due to them being extremely busy. The experts who therefore responded to the questionnaire counted 24 responses. With 294 data elements per questionnaire this provided a total of 7 056 data elements which were analysed. The core of the analysis focused on the correlations between the 7 056 data elements.

Based on a sample of 24 responses (out of the estimated total population of 400 country-wide) and utilising a confidence level of 95% together with a response distribution of 50%, the confidence interval (also known as the “margin of error” was calculated as 19.42. In interpreting the survey results, the 19.42 confidence interval was utilised to calculate the upper and lower limits of the correlation coefficients based on a 95% confidence level. The researcher is aware that the relatively small sample could lead to questionable results, but the decision was taken to seek qualitative information by questioning experts and senior staff in IT and IS organisations, rather than look for quantities of information.

3.4 Limitations of the research

This research relied on a relatively small number of highly experienced individuals in South Africa involved in IT and IS projects and related contracts and contracting methods. The 24 participants were chosen by approaching leading IT and IS providers and users known to the researcher and the top management in his organisation. Although a high level of co-operation was expected, there was the risk that certain information was deemed as intellectual property and could therefore not be shared. Every effort was made to ensure that this information was obtained, albeit in a more generalised form than exactly to specified questions in the questionnaire. The risk of non-participation materialised and reduced the sample population.

4 RESULTS AND ANALYSIS OF RESPONSES PER RISK FACTOR

4.1 Introduction

The results of this research are presented and discussed as per category and its related risk factors described in Chapter 2.

The risk factors and categorisations as described in Section 2.3, 'risk factor identification and categorisation', were included in the research questionnaire and the results of the responses for each risk factor are provided and discussed in this section. The small sample could lead to questionable interpretation of the data but the researcher is confident of the information provided by the expert participants and of the results produced through the data-collection method.

4.1.1 Corporate management related risk factors

4.1.1.1 Lack of commitment from top senior management

The consolidated results for the lack of commitment from top senior management results are reflected in Table 4.1.

Table 4.1: Lack of commitment from top senior management

Have you encountered project risks related to this item? Y/N	<u>Yes</u>	<u>No</u>	
	19	5	
Were there contract clauses in place to specifically address this item? Y/N	<u>Yes</u>	<u>No</u>	
	3	21	
Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other)	<u>NEC/FIDIC</u>	<u>Custom</u>	<u>N/A</u>
	12	8	4
Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	<u>Custom</u>	<u>Standard</u>	<u>N/A</u>
	6	12	6
If clauses were in place, were these generic or specifically related to Information Technology/Systems (IT-IS) projects? Generic/IT-IS/NA	<u>IT-IS</u>	<u>Generic</u>	<u>N/A</u>
	6	10	8
Was it ever required to invoke these clauses? Y/N/	<u>Y</u>	<u>N</u>	<u>N/A</u>
	4	8	12
If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	<u>Invoked and Y</u>	<u>Invoked and N</u>	<u>Not Invoked or N/A</u>
	3	1	20

As shown in Table 4.1, although a lack of commitment from senior management was a risk factor which had been encountered by 19 (79.2%) of the 24 respondents, in only three cases were there specific clauses in place to address these risk factors. Although there were only three specific clauses to address this risk factor, there were six IT-IS specific clauses indicating that three of the IT-IS specific clauses were generic and not specific to address the lack of commitment from senior management risk factors.

Overall, in only four of the 19 (21%) cases where issues were encountered contract clauses had been invoked to resolve these issues.

From the four cases where contract clauses had been invoked, three (75%) of these cases were successfully resolved.

4.1.1.2 Corporate instability and/or organisational change causing instability in the project

The consolidated results are illustrated in Table 4.2.

Table 4.2: Corporate instability and/or organisational change causing instability in the project

Have you encountered project risks related to this item? Y/N	<u>Yes</u>	<u>No</u>	
	19	5	
Were there contract clauses in place to specifically address this item? Y/N	<u>Yes</u>	<u>No</u>	
	4	20	
Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other)	<u>NEC/FIDIC</u>	<u>Custom</u>	<u>N/A</u>
	12	8	4
Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	<u>Custom</u>	<u>Standard</u>	<u>N/A</u>
	7	10	7
If clauses were in place, were these generic or specifically related to Information Technology Systems (IT-IS) projects? Generic/IT-IS/NA	<u>IT-IS</u>	<u>Generic</u>	<u>N/A</u>
	4	9	11
Was it ever required to invoke these clauses? Y/N/NA	<u>Y</u>	<u>N</u>	<u>N/A</u>
	2	9	13
If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	<u>Invoked and Y</u>	<u>Invoked and N</u>	<u>Not Invoked or N/A</u>
	1	1	22

Although corporate instability and/or organisational change causing instability in the project were encountered by 19 (79.2%) of the 24 respondents, in only four cases were there specific clauses in place to address these risk factors. Of the four cases which had specific clauses, all had IT-IS specific clauses.

Overall, in only two (10.5%) of the 19 cases where issues were encountered contract clauses had been invoked to resolve these issues.

Of the two cases where contract clauses had been invoked one (50%) was successfully resolved.

4.1.1.3 Lack of client ownership or de-prioritisation of the project

The consolidated results are presented in Table 4.3 below.

Table 2.3: Lack of client ownership or de-prioritisation of the project

Have you encountered project risks related to this item? Y/N	<u>Yes</u>	<u>No</u>	
	18	6	
Were there contract clauses in place to specifically address this item? Y/N	<u>Yes</u>	<u>No</u>	
	4	20	
Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other)	<u>NEC/FIDIC</u>	<u>Custom</u>	<u>N/A</u>
	11	8	5
Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	<u>Custom</u>	<u>Standard</u>	<u>N/A</u>
	7	10	7
If clauses were in place, were these generic or specifically related to Information Technology/Systems (IT-IS) projects? Generic/IT-IS/NA	<u>IT-IS</u>	<u>Generic</u>	<u>N/A</u>
	5	10	9
Was it ever required to invoke these clauses? Y/N/NA	<u>Y</u>	<u>N</u>	<u>N/A</u>
	3	8	13
If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	<u>Invoked and Y</u>	<u>Invoked and N</u>	<u>Not Invoked or N/A</u>
	3	0	21

Although lack of client ownership or de-prioritisation of the project was encountered by 18 (75%) of the 24 respondents, in only four cases were specific clauses in place to address these risk factors.

Although there were only four specific clauses to address the risk factors, there were five IT-IS specific clauses, indicating that one of the IT-IS specific clauses was

generic and not specific to addressing the lack of client ownership or de-prioritisation of the project risk factors.

Overall, in only three (21%) of the 18 cases where issues had been encountered contract clauses were invoked to resolve these issues.

Of the three cases where contract clauses had been invoked, all (100%) were successfully resolved.

4.1.1.4 Lack of supplier ownership or de-prioritisation of the project

In Table 4.4 the consolidated results are reflected.

Table 4.4: Lack of supplier ownership or de-prioritisation of the project

Have you encountered project risks related to this item? Y/N	<u>Yes</u>	<u>No</u>	
	16	8	
Were there contract clauses in place to specifically address this item? Y/N	<u>Yes</u>	<u>No</u>	
	13	11	
Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other)	<u>NEC/FIDIC</u>	<u>Custom</u>	<u>N/A</u>
	12	8	4
Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	<u>Custom</u>	<u>Standard</u>	<u>N/A</u>
	9	10	5
If clauses were in place, were these generic or specifically related to Information Technology/Systems (IT-IS) projects? Generic/IT-IS/NA	<u>IT-IS</u>	<u>Generic</u>	<u>N/A</u>
	8	10	6
Was it ever required to invoke these clauses? Y/N/NA	<u>Y</u>	<u>N</u>	<u>N/A</u>
	9	5	10
If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	<u>Invoked and Y</u>	<u>Invoked and N</u>	<u>Not Invoked or N/A</u>
	7	2	15

The lack of supplier ownership or de-prioritisation of the project was encountered by 16 (66.7%) of the 24 respondents. However, this risk factor seems to be well understood and addressed in contract clauses as in 13 cases there were specific clauses in place to address these risk factors. Of the 13 cases which had specific clauses, eight had IT-IS specific clauses.

Overall, in nine (56.3%) of the 16 cases where issues had been encountered contract clauses were invoked to resolve them.

Of the nine cases where contract clauses had been invoked, seven (77.8%) of these cases were successfully resolved.

4.1.1.5 Adversarial relationships and loss of trust between vendor and client

In Table 4.5 the consolidated results are shown.

Table 4.5: Adversarial relationships and loss of trust between vendor and client

Have you encountered project risks related to this item? Y/N	<u>Yes</u>	<u>No</u>	
	21	3	
Were there contract clauses in place to specifically address this item? Y/N	<u>Yes</u>	<u>No</u>	
	10	14	
Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other)	<u>NEC/FIDIC</u>	<u>Custom</u>	<u>N/A</u>
	13	8	3
Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	<u>Custom</u>	<u>Standard</u>	<u>N/A</u>
	10	10	4
If clauses were in place, were these generic or specifically related to Information Technology/Systems (IT-IS) projects? Generic/IT-IS/NA	<u>IT-IS</u>	<u>Generic</u>	<u>N/A</u>
	8	11	5
Was it ever required to invoke these clauses? Y/N/NA	<u>Y</u>	<u>N</u>	<u>N/A</u>
	9	7	8
If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	<u>Invoked and Y</u>	<u>Invoked and N</u>	<u>Not Invoked or N/A</u>
	5	4	15

The adversarial relationships and loss of trust between vendor and client were encountered by 21 (87.5%) of the 24 respondents. This risk factor seems, however, to be addressed in contract clauses as in 10 cases there were specific clauses in place to address these risk factors. Of the 10 cases which had specific clauses, eight had IT-IS specific clauses.

Overall, in nine (42.9%) of the 21 cases where issues were encountered, contract clauses had been invoked to resolve these issues.

Of the nine cases where contract clauses had been invoked, five (55.6%) were successfully resolved.

4.1.1.6 No formal alignment of project with business strategy

The consolidated results are reflected in Table 4.6 below.

Table 4.6: No formal alignment of project with business strategy

Have you encountered project risks related to this item? Y/N	<u>Yes</u>	<u>No</u>	
	12	12	
Were there contract clauses in place to specifically address this item? Y/N	<u>Yes</u>	<u>No</u>	
	3	21	
Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other)	<u>NEC/FIDIC</u>	<u>Custom</u>	<u>N/A</u>
	11	7	6
Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	<u>Custom</u>	<u>Standard</u>	<u>N/A</u>
	8	7	9
If clauses were in place, were these generic or specifically related to Information Technology/Systems (IT-IS) projects? Generic/IT-IS/NA	<u>IT-IS</u>	<u>Generic</u>	<u>N/A</u>
	4	8	12
Was it ever required to invoke these clauses? Y/N/NA	<u>Y</u>	<u>N</u>	<u>N/A</u>
	0	9	15
If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	<u>Invoked and Y</u>	<u>Invoked and N</u>	<u>Not Invoked or N/A</u>
	0	0	24

The risk factor that there was no formal alignment of projects with business strategy was encountered by only 12 (50%) of the 24 respondents. Only in three cases were clauses in place to address this risk factor. Although there were only three specific clauses to address the risk factor, there were four IT-IS specific clauses, indicating that one of the IT-IS specific clauses was generic and not specific to addressing no formal alignment of projects with business strategy risk factors.

In none of the cases had these clauses been invoked.

The fact that in 50% of cases issues were encountered but the clauses had not been invoked coupled with the indication that only in three cases specific contract clauses were in place, indicates that there is a general lack of understanding on how to contract for, and invoke contract clauses to, address this type of risk factor.

4.1.1.7 Communications breakdown between parties involved

The consolidated results are reflected in Table 4.7.

Table 4.7: Communications breakdown between parties involved

Have you encountered project risks related to this item? Y/N	<u>Yes</u>	<u>No</u>	
	17	7	
Were there contract clauses in place to specifically address this item? Y/N	<u>Yes</u>	<u>No</u>	
	12	12	
Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other)	<u>NEC/FIDIC</u>	<u>Custom</u>	<u>N/A</u>
	13	9	2
Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	<u>Custom</u>	<u>Standard</u>	<u>N/A</u>
	11	10	3
If clauses were in place, were these generic or specifically related to Information Technology/Systems (IT-IS) projects? Generic/IT-IS/NA	<u>IT-IS</u>	<u>Generic</u>	<u>N/A</u>
	8	12	4
Was it ever required to invoke these clauses? Y/N/NA	<u>Y</u>	<u>N</u>	<u>N/A</u>
	6	8	10
If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	<u>Invoked and Y</u>	<u>Invoked and N</u>	<u>Not Invoked or N/A</u>
	5	1	18

The breakdown of communications between parties involved was encountered by 17 (70.8%) of the 24 respondents. This risk factor seems, however, to be addressed in contract clauses as in 12 cases there were specific clauses in place to address these risk factors. Of the 12 cases which had specific clauses, eight (67%) had IT-IS specific clauses.

Overall, in six (35.3%) of the 17 cases where issues were encountered contract clauses had been invoked to resolve these issues.

Of the six cases where contract clauses had been invoked, five (83.3%) were successfully resolved.

4.1.2 Corporate management related risk factors consolidated results

The consolidated results for the corporate management related risk factors category are presented next.

Table 4.8: Corporate management related risk factors consolidated results

Have you encountered project risks related to this item? Y/N	<u>Yes</u>	<u>No</u>	
	122	46	
Were there contract clauses in place to specifically address this item? Y/N	<u>Yes</u>	<u>No</u>	
	49	119	
Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other)	<u>NEC/FIDIC</u>	<u>Custom</u>	<u>N/A</u>
	84	56	28
Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	<u>Custom</u>	<u>Standard</u>	<u>N/A</u>
	58	69	41
If clauses were in place, were these generic or specifically related to Information Technology/Systems (IT-IS) projects? Generic/IT-IS/NA	<u>IT-IS</u>	<u>Generic</u>	<u>N/A</u>
	43	70	55
Was it ever required to invoke these clauses? Y/N/NA	<u>Y</u>	<u>N</u>	<u>N/A</u>
	33	54	81
If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	<u>Invoked and Y</u>	<u>Invoked and N</u>	<u>Not Invoked or N/A</u>
	24	9	135

Concerning corporate management related risk factors, issues were encountered by 122 (72.6%) out of the 168 responses. It was the lowest rate of issues encountered among all the risk factor categories.

In this category contract clauses were in place for only 49 (29.2%) of the 168 responses; it was also the lowest of all the risk factor categories.

Standardised contracts (NEC/FIDIC) were in 84 of the 168 responses; thus 50%.

In this category clauses specific to IT-IS were found in 43 (87.8%) of the 49 responses which utilised clauses. Thus, the category with the second highest percentage IT-IS specific clauses was corporate management risk factors.

In this category clauses had been invoked 33 times, of which the contract clauses were successfully utilised 24 (72.7%) times to resolve the issue. It was the highest resolution rate based of all risk factor categories.

The Pearson correlation coefficient between having specific clauses in place and resolving the issues through contract clauses for corporate management related risk factors is:

$$r = 0.885964634$$

It shows a clear correlation between the existence of risk factor-specific contract clauses and the resolution of issues related to these risk factors.

The Pearson correlation coefficient between having specific IT-IS related clauses in place, and invoking these contract clauses to resolve corporate management related risk factors, is:

$$r = 0.940096177$$

It shows a clear correlation between the existence of IT-IS specific contract clauses and the invocation of contract clauses to resolve these risk factors.

The Pearson correlation coefficient between having specific IT-IS related clauses in place and successfully utilising these contract clauses to resolve corporate management related risk factors, is:

$$r = 0.936928821$$

It shows a clear correlation between the existence of IT-IS specific contract clauses and the invocation of contract clauses to resolve corporate management related risk factors.

The correlation analysis of the results indicates that there was a direct correlation where specific IT-IS clauses were in place and issues did arise to the successful resolution of corporate management related risk factors. The success rate of resolving the corporate management related risk factors where IT-IS specific clauses were in place was 72.7%.

The high correlation coefficient and resolution rate indicate that, should more projects have specific IT-IS contract clauses to address corporate management related risk factors, these risk factors can be more effectively mitigated should they arise.

4.1.3 Project management risk factors

4.1.3.1 Functional requirements not documented or unrealistic

The consolidated results are shown in Table 4.9.

Table 4.9: Functional requirements not documented or unrealistic

Have you encountered project risks related to this item? Y/N	<u>Yes</u>	<u>No</u>	
	18	6	
Were there contract clauses in place to specifically address this item? Y/N	<u>Yes</u>	<u>No</u>	
	12	12	
Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other)	<u>NEC/FIDIC</u>	<u>Custom</u>	<u>N/A</u>
	13	9	2
Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	<u>Custom</u>	<u>Standard</u>	<u>N/A</u>
	10	12	2
If clauses were in place, were these generic or specifically related to Information Technology/Systems (IT-IS) projects? Generic/IT-IS/NA	<u>IT-IS</u>	<u>Generic</u>	<u>N/A</u>
	12	10	2
Was it ever required to invoke these clauses? Y/N/NA	<u>Y</u>	<u>N</u>	<u>N/A</u>
	10	6	8
If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	<u>Invoked and Y</u>	<u>Invoked and N</u>	<u>Not Invoked or N/A</u>
	7	3	14

Functional requirements not documented or unrealistic were encountered by 18 (75%) of the 24 respondents (75%). This risk factor seems, however, to be addressed in contract clauses as in 12 cases there were specific clauses in place to address these risk factors. Of the 12 cases which had specific clauses, all 12 had IT-IS specific clauses.

Overall, in ten (55.6%) of the 18 cases where issues were encountered contract clauses had been invoked to resolve these issues.

Of the ten cases where contract clauses had been invoked, seven (70%) were successfully resolved.

4.1.3.2 Performance requirements not documented or unrealistic

The consolidated results are reflected in Table 4.10.

Table 4.10: Performance requirements not documented or unrealistic

Have you encountered project risks related to this item? Y/N	<u>Yes</u>	<u>No</u>	
	21	3	
Were there contract clauses in place to specifically address this item? Y/N	<u>Yes</u>	<u>No</u>	
	15	9	
Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other)	<u>NEC/FIDIC</u>	<u>Custom</u>	<u>N/A</u>
	14	7	3
Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	<u>Custom</u>	<u>Standard</u>	<u>N/A</u>
	10	13	1
If clauses were in place, were these generic or specifically related to Information Technology/Systems (IT-IS) projects? Generic/IT-IS/NA	<u>IT-IS</u>	<u>Generic</u>	<u>N/A</u>
	13	9	2
Was it ever required to invoke these clauses? Y/N/NA	<u>Y</u>	<u>N</u>	<u>N/A</u>
	14	6	4
If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	<u>Invoked and Y</u>	<u>Invoked and N</u>	<u>Not Invoked or N/A</u>
	5	9	10

Performance requirements either not documented or unrealistic were encountered by 21 (87.5%) of the 24 respondents. This risk factor seems, however, to be addressed in contract clauses as in 15 cases there were specific clauses in place to address these risk factors. Of these 15 cases which had specific clauses, 13 had IT-IS specific clauses.

Overall, in 10 (55.6%) of the 18 cases where issues were encountered contract clauses had been invoked to resolve these issues.

Of the 10 cases where contract clauses had been invoked, seven (70%) were successfully resolved.

4.1.3.3 Reliability requirements not documented or unrealistic

The consolidated results are presented in Table 4.11.

Table 4.11: Reliability requirements not documented or unrealistic

Have you encountered project risks related to this item? Y/N	<u>Yes</u>	<u>No</u>	
	17	7	
Were there contract clauses in place to specifically address this item? Y/N	<u>Yes</u>	<u>No</u>	
	16	8	
Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other)	<u>NEC/FIDIC</u>	<u>Custom</u>	<u>N/A</u>
	14	7	3
Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	<u>Custom</u>	<u>Standard</u>	<u>N/A</u>
	9	13	2
If clauses were in place, were these generic or specifically related to Information Technology/Systems (IT-IS) projects? Generic/IT-IS/NA	<u>IT-IS</u>	<u>Generic</u>	<u>N/A</u>
	13	7	4
Was it ever required to invoke these clauses? Y/N/NA	<u>Y</u>	<u>N</u>	<u>N/A</u>
	9	8	7
If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	<u>Invoked and Y</u>	<u>Invoked and N</u>	<u>Not Invoked or N/A</u>
	4	5	15

The risk factor that the reliability requirements was not documented or unrealistic was encountered by 17 (70.8%) of the 24 respondents. This risk factor seems, however, to be addressed in contract clauses as in 16 cases there were specific clauses in place to address them. Of these 16 cases which had specific clauses, 13 had IT-IS specific clauses.

Overall, in nine (52.9%) of the 17 cases where issues were encountered contract clauses had been invoked to resolve these issues.

Of the nine cases where contract clauses had been invoked, only four (44.4%) were successfully resolved.

4.1.3.4 Project scope not documented or partially documented

The consolidated results for the project scope not documented or only partially documented are illustrated in Table 4.12.

Table 4.12: Project scope not documented or partially documented

Have you encountered project risks related to this item? Y/N	<u>Yes</u>	<u>No</u>	
	20	4	
Were there contract clauses in place to specifically address this item? Y/N	<u>Yes</u>	<u>No</u>	
	14	10	
Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other)	<u>NEC/FIDIC</u>	<u>Custom</u>	<u>N/A</u>
	13	9	2
Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	<u>Custom</u>	<u>Standard</u>	<u>N/A</u>
	9	13	2
If clauses were in place, were these generic or specifically related to Information Technology/Systems (IT-IS) projects? Generic/IT-IS/NA	<u>IT-IS</u>	<u>Generic</u>	<u>N/A</u>
	10	10	4
Was it ever required to invoke these clauses? Y/N/NA	<u>Y</u>	<u>N</u>	<u>N/A</u>
	8	8	8
If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	<u>Invoked and Y</u>	<u>Invoked and N</u>	<u>Not Invoked or N/A</u>
	7	1	16

Project scope not documented or partially documented was encountered by 20 (83.3%) of the 24 respondents. This risk factor seems, however, to be addressed in contract clauses as in 13 cases there were specific clauses in place to address this risk factor. Of these 13 cases which had specific clauses, ten had IT-IS specific clauses.

Overall, in eight of the 20 (40%) cases where issues were encountered contract clauses had been invoked to resolve these issues.

Of the eight cases where contract clauses had been invoked, seven (87.5%) were successfully resolved.

4.1.3.5 Ineffective or poorly trained project managers

The consolidated results are presented in Table 4.13.

Table 4.13: Ineffective or poorly trained project managers

Have you encountered project risks related to this item? Y/N	<u>Yes</u>	<u>No</u>	
	19	5	
Were there contract clauses in place to specifically address this item? Y/N	<u>Yes</u>	<u>No</u>	
	7	17	
Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other)	<u>NEC/FIDIC</u>	<u>Custom</u>	<u>N/A</u>
	14	6	4
Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	<u>Custom</u>	<u>Standard</u>	<u>N/A</u>
	11	7	6
If clauses were in place, were these generic or specifically related to Information Technology/Systems (IT-IS) projects? Generic/IT-IS/NA	<u>IT-IS</u>	<u>Generic</u>	<u>N/A</u>
	5	8	11
Was it ever required to invoke these clauses? Y/N/NA	<u>Y</u>	<u>N</u>	<u>N/A</u>
	5	8	11
If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	<u>Invoked and Y</u>	<u>Invoked and N</u>	<u>Not Invoked or N/A</u>
	4	1	19

The risk factor ineffective or poorly trained project managers was encountered by 19 (79.2%) of the 24 respondents. This risk factor seems, however, to be addressed in contract clauses as in 14 cases there were specific clauses in place to address it. Of these 14 cases which had specific clauses, only five had IT-IS specific clauses.

Overall, in five of the 19 (26.3%) cases where issues were encountered contract clauses had been invoked to resolve these issues.

Of the five cases where contract clauses had been invoked, four of these (80%) were successfully resolved.

4.1.3.6 Inadequate or non-functional change control process

The consolidated results are reflected in Table 4.14.

Table 4.14: Inadequate or non-functional change control process

Have you encountered project risks related to this item? Y/N	<u>Yes</u>	<u>No</u>	
	17	7	
Were there contract clauses in place to specifically address this item? Y/N	<u>Yes</u>	<u>No</u>	
	8	16	
Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other)	<u>NEC/FIDIC</u>	<u>Custom</u>	<u>N/A</u>
	14	8	2
Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	<u>Custom</u>	<u>Standard</u>	<u>N/A</u>
	11	9	4
If clauses were in place, were these generic or specifically related to Information Technology/Systems (IT-IS) projects? Generic/IT-IS/NA	<u>IT-IS</u>	<u>Generic</u>	<u>N/A</u>
	8	8	8
Was it ever required to invoke these clauses? Y/N/NA	<u>Y</u>	<u>N</u>	<u>N/A</u>
	4	7	13
If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	<u>Invoked and Y</u>	<u>Invoked and N</u>	<u>Not Invoked or N/A</u>
	3	1	20

An inadequate or non-functional change control process was encountered by 17 (70.8%) of the 24 respondents; in only eight cases were there specific clauses in place to address the risk factor. Of these eight cases which had specific clauses, all eight had IT-IS specific clauses.

Overall, in four of the 17 (23.5%) cases where issues were encountered contract clauses had been invoked to resolve these issues.

Of the four cases where contract clauses had been invoked, three (75%) were successfully resolved.

4.1.3.7 Not well-defined or lack of defined deliverable and associated deliverable dates

The consolidated results are shown in Table 4.15.

Table 4.15: Not well-defined or lack of defined deliverable and associated deliverable dates

Have you encountered project risks related to this item? Y/N	<u>Yes</u>	<u>No</u>	
	17	7	
Were there contract clauses in place to specifically address this item? Y/N	<u>Yes</u>	<u>No</u>	
	15	9	
Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other)	<u>NEC/FIDIC</u>	<u>Custom</u>	<u>N/A</u>
	14	8	2
Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	<u>Custom</u>	<u>Standard</u>	<u>N/A</u>
	10	10	4
If clauses were in place, were these generic or specifically related to Information Technology/Systems (IT-IS) projects? Generic/IT-IS/NA	<u>IT-IS</u>	<u>Generic</u>	<u>N/A</u>
	9	9	6
Was it ever required to invoke these clauses? Y/N/NA	<u>Y</u>	<u>N</u>	<u>N/A</u>
	8	8	8
If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	<u>Invoked and Y</u>	<u>Invoked and N</u>	<u>Not Invoked or N/A</u>
	6	2	16

Not well-defined or lack of defined deliverable and associated deliverable dates, or the lack thereof, was encountered by 17 (70.8%) of the 24 respondents. This risk factor seems, however, to be addressed in contract clauses as in 15 cases there were specific clauses in place to address it. Of these 15 cases which had specific clauses, nine had IT-IS specific clauses.

Overall, in eight (47.1%) of the 17 cases where issues were encountered contract clauses had been invoked to resolve these issues

Of the eight cases where contract clauses had been invoked, six (75%) were successfully resolved.

4.1.3.8 Criteria defining project success inadequate or undefined

In Table 4.16 the consolidated results are presented.

Table 4.16: Criteria defining project success inadequate or undefined

Have you encountered project risks related to this item? Y/N	<u>Yes</u>	<u>No</u>	
	20	4	
Were there contract clauses in place to specifically address this item? Y/N	<u>Yes</u>	<u>No</u>	
	6	18	
Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other)	<u>NEC/FIDIC</u>	<u>Custom</u>	<u>N/A</u>
	13	9	2
Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	<u>Custom</u>	<u>Standard</u>	<u>N/A</u>
	10	9	5
If clauses were in place, were these generic or specifically related to Information Technology/Systems (IT-IS) projects? Generic/IT-IS/NA	<u>IT-IS</u>	<u>Generic</u>	<u>N/A</u>
	6	10	8
Was it ever required to invoke these clauses? Y/N/NA	<u>Y</u>	<u>N</u>	<u>N/A</u>
	2	11	11
If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	<u>Invoked and Y</u>	<u>Invoked and N</u>	<u>Not Invoked or N/A</u>
	1	1	22

The criteria defining project success inadequate or undefined were encountered by 20 (83.3%) of the 24 respondents. This risk factor seems, however, to be addressed in contract clauses as in ten cases there were specific clauses in place to address this risk factor. Of these ten cases which had specific clauses, six had IT-IS specific clauses.

Overall, in only two (10%) of the 20 cases where issues were encountered contract clauses had been invoked to resolve these issues.

Of the two cases where contract clauses had been invoked, only one (50%) was successfully resolved.

4.1.3.9 No business case for the project

The consolidated results are shown in Table 4.17.

Table 4.17: No business case for the project

Have you encountered project risks related to this item? Y/N	<u>Yes</u>	<u>No</u>	
	8	16	
Were there contract clauses in place to specifically address this item? Y/N	<u>Yes</u>	<u>No</u>	
	7	17	
Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other)	<u>NEC/FIDIC</u>	<u>Custom</u>	<u>N/A</u>
	11	7	6
Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	<u>Custom</u>	<u>Standard</u>	<u>N/A</u>
	9	6	9
If clauses were in place, were these generic or specifically related to Information Technology/Systems (IT-IS) projects? Generic/IT-IS/NA	<u>IT-IS</u>	<u>Generic</u>	<u>N/A</u>
	6	7	11
Was it ever required to invoke these clauses? Y/N/NA	<u>Y</u>	<u>N</u>	<u>N/A</u>
	0	8	16
If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	<u>Invoked and Y</u>	<u>Invoked and N</u>	<u>Not Invoked or N/A</u>
	0	0	24

The risk factor, no business case for the project, was encountered by only eight (33.3%) of the 24 respondents and in only seven cases were there specific clauses in place to address this risk factor. Of these seven cases which had specific clauses, six had IT-IS specific clauses.

Overall, in none (0%) of the eight cases where issues were encountered had contract clauses been invoked to resolve these issues.

4.1.3.10 No project status tracking or progress reporting

The consolidated results are presented in Table 4.18.

Table 4.18: No project status tracking or progress reporting

Have you encountered project risks related to this item? Y/N	<u>Yes</u>	<u>No</u>	
	8	16	
Were there contract clauses in place to specifically address this item? Y/N	<u>Yes</u>	<u>No</u>	
	14	10	
Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other)	<u>NEC/FIDIC</u>	<u>Custom</u>	<u>N/A</u>
	13	8	3
Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	<u>Custom</u>	<u>Standard</u>	<u>N/A</u>
	12	8	4
If clauses were in place, were these generic or specifically related to Information Technology/Systems (IT-IS) projects? Generic/IT-IS/NA	<u>IT-IS</u>	<u>Generic</u>	<u>N/A</u>
	8	12	4
Was it ever required to invoke these clauses? Y/N/NA	<u>Y</u>	<u>N</u>	<u>N/A</u>
	4	11	9
If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	<u>Invoked and Y</u>	<u>Invoked and N</u>	<u>Not Invoked or N/A</u>
	3	1	20

No project status tracking or progress reporting was encountered by only eight (33.3%) of the 24 respondents. This risk factor seems, however, to be addressed in contract clauses as in 14 cases there were specific clauses in place to address the risk factor. Of these 14 cases which had specific clauses, eight had IT-IS specific clauses.

Overall, in four (50%) of the eight cases where issues were encountered contract clauses had been invoked to resolve them.

Of the four cases where contract clauses had been invoked, three (75%) were successfully resolved.

4.1.3.11 Risk management, analysis and tracking not in place or inadequate

The consolidated results are illustrated in Table 4.19.

Table 4.19: Risk management, analysis and tracking not in place or inadequate

Have you encountered project risks related to this item? Y/N	<u>Yes</u>	<u>No</u>	
	17	7	
Were there contract clauses in place to specifically address this item? Y/N	<u>Yes</u>	<u>No</u>	
	11	13	
Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other)	<u>NEC/FIDIC</u>	<u>Custom</u>	<u>N/A</u>
	14	9	1
Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	<u>Custom</u>	<u>Standard</u>	<u>N/A</u>
	13	9	2
If clauses were in place, were these generic or specifically related to Information Technology/Systems (IT-IS) projects? Generic/IT-IS/NA	<u>IT-IS</u>	<u>Generic</u>	<u>N/A</u>
	8	13	3
Was it ever required to invoke these clauses? Y/N/NA	<u>Y</u>	<u>N</u>	<u>N/A</u>
	6	9	9
If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	<u>Invoked and Y</u>	<u>Invoked and N</u>	<u>Not Invoked or N/A</u>
	6	0	18

Risk management, analysis and tracking not in place or inadequate were encountered by 17 (70.8%) of the 24 respondents. This risk factor seems, however, to be addressed in contract clauses as in 11 cases there were specific clauses in place to address these risk factors. Of these 11 cases which had specific clauses, eight had IT-IS specific clauses.

Overall, in six (35.3%) of the 17 cases where issues were encountered contract clauses had been invoked to resolve these issues.

Of the six cases where contract clauses had been invoked, all (100%) were successfully resolved.

4.1.3.12 Delivery deadline not aligned with project schedule or project schedule calculated based on delivery deadline and not effort required

The consolidated results are shown in Table 4.20.

Table 4.20: Delivery deadline not aligned with project schedule or project schedule calculated based on delivery deadline and not effort required

Have you encountered project risks related to this item? Y/N	<u>Yes</u>	<u>No</u>	
	20	4	
Were there contract clauses in place to specifically address this item? Y/N	<u>Yes</u>	<u>No</u>	
	12	12	
Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other)	<u>NEC/FIDIC</u>	<u>Custom</u>	<u>N/A</u>
	12	8	4
Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	<u>Custom</u>	<u>Standard</u>	<u>N/A</u>
	11	9	4
If clauses were in place, were these generic or specifically related to Information Technology/Systems (IT-IS) projects? Generic/IT-IS/NA	<u>IT-IS</u>	<u>Generic</u>	<u>N/A</u>
	7	13	4
Was it ever required to invoke these clauses? Y/N/NA	<u>Y</u>	<u>N</u>	<u>N/A</u>
	8	6	10
If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	<u>Invoked and Y</u>	<u>Invoked and N</u>	<u>Not Invoked or N/A</u>
	4	4	16

Delivery deadline not aligned with the project schedule or the project schedule calculated based on delivery deadline and not effort required was encountered by 20 (83.3%) of the 24 respondents. This risk factor seems, however, to be addressed in contract clauses as in 12 cases there were specific clauses in place to address it. Of these 12 cases which had specific clauses, seven had IT-IS specific clauses.

Overall, in eight (40%) of the 20 cases where issues were encountered contract clauses had been invoked to resolve these issues.

Of the eight cases where contract clauses had been invoked, four (50%) were successfully resolved.

4.1.3.13 Management of project delays, revision of project based on delays encountered

The consolidated results are shown in Table 4.21.

Table 4.21: Management of project delays, revision of project based on delays encountered

Have you encountered project risks related to this item? Y/N	<u>Yes</u>	<u>No</u>	
	24	0	
Were there contract clauses in place to specifically address this item? Y/N	<u>Yes</u>	<u>No</u>	
	16	8	
Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other)	<u>NEC/FIDIC</u>	<u>Custom</u>	<u>N/A</u>
	15	8	1
Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	<u>Custom</u>	<u>Standard</u>	<u>N/A</u>
	12	11	1
If clauses were in place, were these generic or specifically related to Information Technology/Systems (IT-IS) projects? Generic/IT-IS/NA	<u>IT-IS</u>	<u>Generic</u>	<u>N/A</u>
	10	13	1
Was it ever required to invoke these clauses? Y/N/NA	<u>Y</u>	<u>N</u>	<u>N/A</u>
	14	5	5
If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	<u>Invoked and Y</u>	<u>Invoked and N</u>	<u>Not Invoked or N/A</u>
	12	2	10

The management of project delays and revision of project based on delays were encountered by all 24 (100%) of the respondents. These risk factors seem, however, to be addressed in contract clauses as in 16 cases there were specific clauses in place to address these risk factors. Of these 16 cases which had specific clauses, 10 had IT-IS specific clauses.

Overall, in 14 (58.3%) of the 24 cases where issues were encountered contract clauses had been invoked to resolve these issues.

Of the 14 cases where contract clauses had been invoked, 12 (85.7%) of these cases were successfully resolved.

4.1.3.14 Documentation on planning and estimation lacking or inadequate

The consolidated results are presented in Table 4.22.

Table 4.22: Documentation on planning and estimation lacking or inadequate

Have you encountered project risks related to this item? Y/N	<u>Yes</u>	<u>No</u>	
	18	6	
Were there contract clauses in place to specifically address this item? Y/N	<u>Yes</u>	<u>No</u>	
	8	16	
Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other)	<u>NEC/FIDIC</u>	<u>Custom</u>	<u>N/A</u>
	12	8	4
Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	<u>Custom</u>	<u>Standard</u>	<u>N/A</u>
	10	9	5
If clauses were in place, were these generic or specifically related to Information Technology/Systems (IT-IS) projects? Generic/IT-IS/NA	<u>IT-IS</u>	<u>Generic</u>	<u>N/A</u>
	6	12	6
Was it ever required to invoke these clauses? Y/N/NA	<u>Y</u>	<u>N</u>	<u>N/A</u>
	3	8	13
If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	<u>Invoked and Y</u>	<u>Invoked and N</u>	<u>Not Invoked or N/A</u>
	2	1	21

Documentation on planning and estimation lacking or inadequate was encountered by 18 (75%) of the 24 respondents. In only eight cases were there specific clauses in place to address these risk factors. Of these eight cases which had specific clauses, six had IT-IS specific clauses.

Overall, in only three (16.7%) of the 18 cases where issues were encountered contract clauses had been invoked to resolve these issues.

Of the three cases where contract clauses had been invoked, two (66.7%) were successfully resolved.

4.1.3.15 Significant changes to the project, including scope schedule or goals

The consolidated results are illustrated in Table 4.23.

Table 4.23: Significant changes to the project, including scope schedule or goals

Have you encountered project risks related to this item? Y/N	<u>Yes</u>	<u>No</u>	
	21	3	
Were there contract clauses in place to specifically address this item? Y/N	<u>Yes</u>	<u>No</u>	
	19	5	
Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other)	<u>NEC/FIDIC</u>	<u>Custom</u>	<u>N/A</u>
	14	9	1
Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	<u>Custom</u>	<u>Standard</u>	<u>N/A</u>
	11	11	2
If clauses were in place, were these generic or specifically related to Information Technology/Systems (IT-IS) projects? Generic/IT-IS/NA	<u>IT-IS</u>	<u>Generic</u>	<u>N/A</u>
	8	14	2
Was it ever required to invoke these clauses? Y/N/NA	<u>Y</u>	<u>N</u>	<u>N/A</u>
	15	4	5
If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	<u>Invoked and Y</u>	<u>Invoked and N</u>	<u>Not Invoked or N/A</u>
	12	3	9

Significant changes to the project, including scope, schedule or goals, were encountered by 21 (87.5%) of the 24 respondents. This risk factor seems, however, to be very well addressed in contract clauses as in 19 cases there were specific clauses in place to address this risk factor. Of these 19 cases which had specific clauses, eight had IT-IS specific clauses.

Overall, in 15 (71.4%) of the 21 cases where issues were encountered contract clauses had been invoked to resolve these issues.

Of the 15 cases where contract clauses had been invoked, 12 (80%) of these cases were successfully resolved.

4.1.3.16 Roles and responsibilities of team members are not clearly defined

The consolidated results are shown in Table 4.24.

Table 4.24: Roles and responsibilities of team members are not clearly defined

Have you encountered project risks related to this item? Y/N	<u>Yes</u>	<u>No</u>	
	18	6	
Were there contract clauses in place to specifically address this item? Y/N	<u>Yes</u>	<u>No</u>	
	12	12	
Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other)	<u>NEC/FIDIC</u>	<u>Custom</u>	<u>N/A</u>
	13	9	2
Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	<u>Custom</u>	<u>Standard</u>	<u>N/A</u>
	10	11	3
If clauses were in place, were these generic or specifically related to Information Technology/Systems (IT-IS) projects? Generic/IT-IS/NA	<u>IT-IS</u>	<u>Generic</u>	<u>N/A</u>
	8	12	4
Was it ever required to invoke these clauses? Y/N/NA	<u>Y</u>	<u>N</u>	<u>N/A</u>
	7	9	8
If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	<u>Invoked and Y</u>	<u>Invoked and N</u>	<u>Not Invoked or N/A</u>
	5	2	17

The risk factor, namely that the roles and responsibilities of team members were not clearly defined, was encountered by 18 (75%) of the 24 respondents. This risk factor seems, however, to be addressed in contract clauses as in 12 cases there were specific clauses in place to address it. Of these 12 cases which had specific clauses, eight had IT-IS specific clauses.

Overall, in seven (38.9%) of the 18 cases where issues were encountered contract clauses had been invoked to resolve these issues.

Of the seven cases where contract clauses had been invoked, five (80%) of the cases were successfully resolved.

4.1.3.17 Project communications lacking or not defined, including planning and resources

The consolidated results are presented in Table 4.25.

Table 4.25: Project communications lacking or not defined, including planning and resources

Have you encountered project risks related to this item? Y/N	<u>Yes</u>	<u>No</u>	
	19	5	
Were there contract clauses in place to specifically address this item? Y/N	<u>Yes</u>	<u>No</u>	
	10	14	
Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other)	<u>NEC/FIDIC</u>	<u>Custom</u>	<u>N/A</u>
	13	9	2
Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	<u>Custom</u>	<u>Standard</u>	<u>N/A</u>
	10	10	4
If clauses were in place, were these generic or specifically related to Information Technology/Systems (IT-IS) projects? Generic/IT-IS/NA	<u>IT-IS</u>	<u>Generic</u>	<u>N/A</u>
	6	13	5
Was it ever required to invoke these clauses? Y/N/NA	<u>Y</u>	<u>N</u>	<u>N/A</u>
	5	9	10
If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	<u>Invoked and Y</u>	<u>Invoked and N</u>	<u>Not Invoked or N/A</u>
	3	2	19

Project communications lacking or not defined, including planning and resources, were encountered by 19 (79.2%) of the 24 respondents. This risk factor seems, however, to be addressed in contract clauses as in ten cases there were specific clauses in place to address this risk factor. Of these ten cases which had specific clauses, six had IT-IS specific clauses.

Overall, in only five (26.3%) of the 19 cases where issues were encountered contract clauses had been invoked to resolve these issues.

Of the five cases where contract clauses had been invoked, three (60%) were successfully resolved.

4.1.3.18 Project management methodology not properly implemented or not being used at all

The consolidated results are shown in Table 4.26.

Table 4.26: Project management methodology not properly implemented or not being used at all

Have you encountered project risks related to this item? Y/N	<u>Yes</u>	<u>No</u>	
	16	8	
Were there contract clauses in place to specifically address this item? Y/N	<u>Yes</u>	<u>No</u>	
	11	13	
Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other)	<u>NEC/FIDIC</u>	<u>Custom</u>	<u>N/A</u>
	14	9	1
Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	<u>Custom</u>	<u>Standard</u>	<u>N/A</u>
	15	7	2
If clauses were in place, were these generic or specifically related to Information Technology/Systems (IT-IS) projects? Generic/IT-IS/NA	<u>IT-IS</u>	<u>Generic</u>	<u>N/A</u>
	8	14	2
Was it ever required to invoke these clauses? Y/N/NA	<u>Y</u>	<u>N</u>	<u>N/A</u>
	5	11	8
If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	<u>Invoked and Y</u>	<u>Invoked and N</u>	<u>Not Invoked or N/A</u>
	4	1	19

Project management methodology not properly implemented or not being used at all as a risk factor was encountered by 16 (66.7%) of the 24 respondents. This risk factor seems, however, to be addressed in contract clauses as in 11 cases there were specific clauses in place to address the risk factor. Of these 11 cases which had specific clauses, eight had IT-IS specific clauses.

Overall, in only five of the 16 (31.3%) cases where issues were encountered contract clauses had been invoked to resolve these issues.

Of the five cases where contract clauses had been invoked, four (80%) were successfully resolved.

4.1.3.19 Project charter not created or incomplete

The consolidated results are shown in Table 4.27.

Table 4.27: Project charter not created or incomplete

Have you encountered project risks related to this item? Y/N	<u>Yes</u>	<u>No</u>	
	15	9	
Were there contract clauses in place to specifically address this item? Y/N	<u>Yes</u>	<u>No</u>	
	7	17	
Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other)	<u>NEC/FIDIC</u>	<u>Custom</u>	<u>N/A</u>
	11	8	5
Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	<u>Custom</u>	<u>Standard</u>	<u>N/A</u>
	10	7	7
If clauses were in place, were these generic or specifically related to Information Technology/Systems (IT-IS) projects? Generic/IT-IS/NA	<u>IT-IS</u>	<u>Generic</u>	<u>N/A</u>
	6	10	8
Was it ever required to invoke these clauses? Y/N/NA	<u>Y</u>	<u>N</u>	<u>N/A</u>
	2	9	13
If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	<u>Invoked and Y</u>	<u>Invoked and N</u>	<u>Not Invoked or N/A</u>
	1	1	22

The project charter not created or incomplete was encountered by 15 (62.5%) of the 24 respondents. In only seven cases were there specific clauses in place to address this risk factor. Of these seven cases which had specific clauses, six had IT-IS specific clauses.

Overall, in only two of the 15 (13.3%) cases where issues were encountered contract clauses had been invoked to resolve them.

Of the two cases where contract clauses had been invoked, only one (50%) was successfully resolved.

4.1.3.20 Key project deliverables are outside the locus of control of the project team

The consolidated results are indicated in Table 4.28.

Table 4.28: Key project deliverables are outside the locus of control of the project team

Have you encountered project risks related to this item? Y/N	<u>Yes</u>	<u>No</u>	
	17	7	
Were there contract clauses in place to specifically address this item? Y/N	<u>Yes</u>	<u>No</u>	
	11	13	
Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other)	<u>NEC/FIDIC</u>	<u>Custom</u>	<u>N/A</u>
	13	8	3
Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	<u>Custom</u>	<u>Standard</u>	<u>N/A</u>
	12	8	4
If clauses were in place, were these generic or specifically related to Information Technology/Systems (IT-IS) projects? Generic/IT-IS/NA	<u>IT-IS</u>	<u>Generic</u>	<u>N/A</u>
	9	10	5
Was it ever required to invoke these clauses? Y/N/NA	<u>Y</u>	<u>N</u>	<u>N/A</u>
	5	12	7
If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	<u>Invoked and Y</u>	<u>Invoked and N</u>	<u>Not Invoked or N/A</u>
	1	4	19

The risk factor that key project deliverables being outside the locus of control of the project team was encountered by 17 (70.8%) of the 24 respondents. This risk factor seems, however, to be addressed in contract clauses as in 11 cases there were specific clauses in place to address this risk factor. Of these 11 cases which had specific clauses, nine had IT-IS specific clauses.

Overall, in only five (29.4%) of the 17 cases where issues were encountered contract clauses had been invoked to resolve them.

Of the five cases where contract clauses had been invoked, only one (20%) was successfully resolved.

4.1.4 Project management risk factors consolidated results

The consolidated results for the project management risk factors category are illustrated in Table 4.29.

Table 4.29: Project management risk factors consolidated results

Have you encountered project risks related to this item? Y/N	<u>Yes</u>	<u>No</u>	
	350	130	
Were there contract clauses in place to specifically address this item? Y/N	<u>Yes</u>	<u>No</u>	
	231	249	
Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other)	<u>NEC/FIDIC</u>	<u>Custom</u>	<u>N/A</u>
	264	163	53
Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	<u>Custom</u>	<u>Standard</u>	<u>N/A</u>
	215	192	73
If clauses were in place, were these generic or specifically related to Information Technology/Systems (IT-IS) projects? Generic/IT-IS/NA	<u>IT-IS</u>	<u>Generic</u>	<u>N/A</u>
	166	214	100
Was it ever required to invoke these clauses? Y/N/NA	<u>Y</u>	<u>N</u>	<u>N/A</u>
	134	163	183
If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	<u>Invoked and Y</u>	<u>Invoked and N</u>	<u>Not Invoked or N/A</u>
	90	44	346

For project management related risk factors, issues were encountered by 350 (72.9%) out of a total of 480 responses. This was the second lowest rate of issues encountered and only 0.3% higher than the rate of issues encountered in corporate management related risk factors.

In this category contract clauses were in place for 231 (48.1%) out of 480 responses; it was the highest incidence of all the risk factor categories.

Standardised contracts (NEC/FIDIC) were 264 out of 480; thus 55%.

In this category clauses specific to IT-IS were found in 166 (71.9%) of the 231 responses that utilised clauses. Project management risk factors were therefore the category with the lowest percentage of IT-IS specific clauses.

In this category clauses were invoked 134 times. The contract clauses were successfully utilised 90 (67.2%) times to resolve the issue. It was the second highest resolution rate based off all risk factor categories.

The Pearson correlation coefficient, between having specific clauses in place and resolving the issues through contract clauses for project management related risk factors, is:

$$r = 0.769456563$$

It shows a clear correlation between the existence of risk factor specific contract clauses and the resolution of issues related to project management related risk factors.

The Pearson correlation coefficient between having specific IT-IS related clauses in place and invoking these contract clauses to resolve project management related risk factors, is:

$$r = 0.676922185$$

It shows a clear correlation between the existence of IT-IS specific contract clauses and the invocation of contract clauses to resolve project management related risk factors.

The Pearson correlation coefficient between having specific IT-IS related clauses in place and successfully utilising these contract clauses to resolve project management related risk factors, is:

$$r = 0.421500357$$

It shows a correlation between the existence of IT-IS specific contract clauses and the invocation of contract clauses to resolve project management related risk factors.

The correlation analysis of the results indicated that there was a direct correlation where specific IT-IS clauses were in place and issues did arise, to the successful resolution of project management related risk factors. The success rate of resolving the corporate management related risk factors where IT-IS specific clauses were in place was 67.2%.

The correlation and high resolution percentage shows that even though less IT-IS specific clauses were utilised than in other risk factor categories, the overall incidence of having specific risk factor related contract clauses in place was the highest of all risk factor categories.

The high incidence of risk factor specific but not IT-IS specific clauses indicates that project management risk factors are less IT-IS specific and, even if contract clauses are only in place to address the generic project management related risk factor elements, the overall project risk can be reduced.

4.1.5 Resource related risk factors

4.1.5.1 Commitment and belief of project team members in meeting the project scope within schedule is low

The consolidated results are reflected in Table 4.30.

Table 4.30: Commitment and belief of project team members in meeting the project scope within schedule is low

Have you encountered project risks related to this item? Y/N	<u>Yes</u>	<u>No</u>	
	21	3	
Were there contract clauses in place to specifically address this item? Y/N	<u>Yes</u>	<u>No</u>	
	2	22	
Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other)	<u>NEC/FIDIC</u>	<u>Custom</u>	<u>N/A</u>
	11	9	4
Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	<u>Custom</u>	<u>Standard</u>	<u>N/A</u>
	10	7	7
If clauses were in place, were these generic or specifically related to Information Technology/Systems (IT-IS) projects? Generic/IT-IS/NA	<u>IT-IS</u>	<u>Generic</u>	<u>N/A</u>
	6	8	10
Was it ever required to invoke these clauses? Y/N/NA	<u>Y</u>	<u>N</u>	<u>N/A</u>
	2	8	14
If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	<u>Invoked and Y</u>	<u>Invoked and N</u>	<u>Not Invoked or N/A</u>
	1	1	22

A low commitment and belief of project team members that meeting the project scope within schedule was encountered by 21 (87.5%) of the 24 respondents. This risk factor is, however, not well addressed in contract clauses as only two cases had specific clauses in place to address this risk factor. Although there were only two specific clauses to address the risk factor, there were six IT-IS specific clauses, indicating that four of the IT-IS specific clauses were generic and not specific to addressing the low commitment and belief of project team members in meeting the project scope within schedule as a risk factor.

Overall, in only two (9.5%) of the 21 cases where issues were encountered contract clauses had been invoked to resolve these issues.

Of the two cases where contract clauses had been invoked, only one (50%) was successfully resolved.

4.1.5.2 Key stakeholders are unavailable or only have limited availability for review sessions of project

The consolidated results are shown in Table 4.31.

Table 4.31: Key stakeholders are unavailable or only have limited availability for review sessions of project

Have you encountered project risks related to this item? Y/N	<u>Yes</u>	<u>No</u>	
	20	4	
Were there contract clauses in place to specifically address this item? Y/N	<u>Yes</u>	<u>No</u>	
	8	16	
Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other)	<u>NEC/FIDIC</u>	<u>Custom</u>	<u>N/A</u>
	12	8	4
Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	<u>Custom</u>	<u>Standard</u>	<u>N/A</u>
	12	9	3
If clauses were in place, were these generic or specifically related to Information Technology/Systems (IT-IS) projects? Generic/IT-IS/NA	<u>IT-IS</u>	<u>Generic</u>	<u>N/A</u>
	8	11	5
Was it ever required to invoke these clauses? Y/N/NA	<u>Y</u>	<u>N</u>	<u>N/A</u>
	4	10	10
If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	<u>Invoked and Y</u>	<u>Invoked and N</u>	<u>Not Invoked or N/A</u>
	1	3	20

That the key stakeholders are unavailable or only have limited availability for review sessions of projects was encountered by 20 (83.3%) of the 24 respondents. This risk factor seems, however, to be addressed in contract clauses as in eight cases there were specific clauses in place to address it. Of these eight cases which had specific clauses, all eight had IT-IS specific clauses.

Overall, in only four of the 20 (20%) cases where issues were encountered contract clauses had been invoked to resolve these issues.

Of the four cases where contract clauses had been invoked, only one (25%) was successfully resolved.

4.1.5.3 Skills, knowledge or experience of resources on project team are lacking

The consolidated results are reflected in Table 4.32.

Table 3 Skills, knowledge or experience of resources on project team are lacking

Have you encountered project risks related to this item? Y/N	<u>Yes</u>	<u>No</u>	
	21	3	
Were there contract clauses in place to specifically address this item? Y/N	<u>Yes</u>	<u>No</u>	
	12	12	
Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other)	<u>NEC/FIDIC</u>	<u>Custom</u>	<u>N/A</u>
	13	9	2
Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	<u>Custom</u>	<u>Standard</u>	<u>N/A</u>
	12	9	3
If clauses were in place, were these generic or specifically related to Information Technology/Systems (IT-IS) projects? Generic/IT-IS/NA	<u>IT-IS</u>	<u>Generic</u>	<u>N/A</u>
	9	11	4
Was it ever required to invoke these clauses? Y/N/NA	<u>Y</u>	<u>N</u>	<u>N/A</u>
	8	9	7
If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	<u>Invoked and Y</u>	<u>Invoked and N</u>	<u>Not Invoked or N/A</u>
	6	2	16

The lack of skills, knowledge or experience of resources on the side of the project team was encountered by 21 (87.5%) of the 24 respondents. This risk factor seems, however, to be addressed in contract clauses as in 12 cases there were specific clauses in place to address this risk factor. Of these 12 cases which had specific clauses, nine had IT-IS specific clauses.

Overall, in only eight (38.1%) of the 21 cases where issues were encountered contract clauses had been invoked to resolve these issues.

Of the eight cases where contract clauses had been invoked, five (62.5%) were successfully resolved.

4.1.5.4 Project resources are only partly assigned or become fully assigned to another project which is deemed of higher importance

The consolidated results are shown in Table 4.33.

Table 4.33: Project resources are only partly assigned or become fully assigned to another project which is deemed of higher importance

Have you encountered project risks related to this item? Y/N	<u>Yes</u>	<u>No</u>	
	20	4	
Were there contract clauses in place to specifically address this item? Y/N	<u>Yes</u>	<u>No</u>	
	10	14	
Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other)	<u>NEC/FIDIC</u>	<u>Custom</u>	<u>N/A</u>
	14	8	2
Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	<u>Custom</u>	<u>Standard</u>	<u>N/A</u>
	12	9	3
If clauses were in place, were these generic or specifically related to Information Technology/Systems (IT-IS) projects? Generic/IT-IS/NA	<u>IT-IS</u>	<u>Generic</u>	<u>N/A</u>
	8	12	4
Was it ever required to invoke these clauses? Y/N/NA	<u>Y</u>	<u>N</u>	<u>N/A</u>
	8	8	8
If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	<u>Invoked and Y</u>	<u>Invoked and N</u>	<u>Not Invoked or N/A</u>
	4	4	16

The risk factor that project resources only partly assigned or becoming fully assigned to another project are deemed of higher importance, was encountered by 20 (83.3%) of the 24 respondents. This risk factor seems, however, to be addressed in contract clauses as in 10 cases there were specific clauses in place to address it. Of these 10 cases which had specific clauses, eight had IT-IS specific clauses.

Overall, in only eight (40%) of the 20 cases where issues were encountered contract clauses had been invoked to resolve these issues.

Of the eight cases where contract clauses had been invoked, four (50%) of these cases were successfully resolved.

4.1.5.5 Over-scheduling of subject matter experts

The consolidated results are shown in Table 4.34.

Table 4.34: Over-scheduling of subject matter experts

Have you encountered project risks related to this item? Y/N	<u>Yes</u>	<u>No</u>	
	22	2	
Were there contract clauses in place to specifically address this item? Y/N	<u>Yes</u>	<u>No</u>	
	4	20	
Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other)	<u>NEC/FIDIC</u>	<u>Custom</u>	<u>N/A</u>
	10	9	5
Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	<u>Custom</u>	<u>Standard</u>	<u>N/A</u>
	10	7	7
If clauses were in place, were these generic or specifically related to Information Technology/Systems (IT-IS) projects? Generic/IT-IS/NA	<u>IT-IS</u>	<u>Generic</u>	<u>N/A</u>
	7	8	9
Was it ever required to invoke these clauses? Y/N/NA	<u>Y</u>	<u>N</u>	<u>N/A</u>
	4	7	13
If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	<u>Invoked and Y</u>	<u>Invoked and N</u>	<u>Not Invoked or N/A</u>
	2	2	20

Over-scheduling of subject matter experts was encountered by 22 (91.6%) of the 24 respondents. This risk factor is, however, not well addressed in contract clauses as only four cases had specific clauses in place to address this risk factor. Although there were only four specific clauses to address the risk factor, there were seven IT-IS specific clauses, indicating that three of the IT-IS specific clauses were generic and not specific to addressing over-scheduling of the subject matter experts risk factors.

Overall, in only four (18.2%) of the 22 cases where issues were encountered contract clauses had been invoked to resolve these issues.

Of the four cases where contract clauses had been invoked, two (50%) were successfully resolved.

4.1.5.6 Timely review and sign-off on decisions, deliverables and documentation

The consolidated results are shown in Table 4.35.

Table 4.35: Timely review and sign-off on decisions, deliverables and documentation

Have you encountered project risks related to this item? Y/N	<u>Yes</u>	<u>No</u>	
	22	2	
Were there contract clauses in place to specifically address this item? Y/N	<u>Yes</u>	<u>No</u>	
	15	9	
Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other)	<u>NEC/FIDIC</u>	<u>Custom</u>	<u>N/A</u>
	13	9	2
Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	<u>Custom</u>	<u>Standard</u>	<u>N/A</u>
	11	11	2
If clauses were in place, were these generic or specifically related to Information Technology/Systems (IT-IS) projects? Generic/IT-IS/NA	<u>IT-IS</u>	<u>Generic</u>	<u>N/A</u>
	8	14	2
Was it ever required to invoke these clauses? Y/N/NA	<u>Y</u>	<u>N</u>	<u>N/A</u>
	11	8	5
If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	<u>Invoked and Y</u>	<u>Invoked and N</u>	<u>Not Invoked or N/A</u>
	7	4	13

The timely review and sign-off on decisions, deliverables and documentation was encountered by 22 (91.6%) of the 24 respondents. This risk factor seems, however, to be addressed in contract clauses as in 15 cases there were specific clauses in place to address these risk factors. Of these 15 cases which had specific clauses, eight had IT-IS specific clauses.

Overall, in 11 (50%) of the 22 cases where issues were encountered contract clauses had been invoked to resolve these issues.

From the 11 cases where contract clauses had been invoked, seven (63.6%) of these cases were successfully resolved.

4.1.5.7 Willingness of users (end-users of the system) to be involved in and co-operate with the project

The consolidated results are presented in Table 4.36.

Table 4.36: Willingness of users (end-users of the system) to be involved in and co-operate with the project

Have you encountered project risks related to this item? Y/N	<u>Yes</u>	<u>No</u>	
	20	4	
Were there contract clauses in place to specifically address this item? Y/N	<u>Yes</u>	<u>No</u>	
	4	20	
Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other)	<u>NEC/FIDIC</u>	<u>Custom</u>	<u>N/A</u>
	11	9	4
Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	<u>Custom</u>	<u>Standard</u>	<u>N/A</u>
	10	7	7
If clauses were in place, were these generic or specifically related to Information Technology/Systems (IT-IS) projects? Generic/IT-IS/NA	<u>IT-IS</u>	<u>Generic</u>	<u>N/A</u>
	6	9	9
Was it ever required to invoke these clauses? Y/N/NA	<u>Y</u>	<u>N</u>	<u>N/A</u>
	2	8	14
If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	<u>Invoked and Y</u>	<u>Invoked and N</u>	<u>Not Invoked or N/A</u>
	1	1	22

The willingness of users (end-users of the system) to be involved in and co-operate with the project was encountered by 20 (83.3%) of the 24 respondents. This risk factor is, however, not well addressed in contract clauses as only four cases had specific clauses in place to address the risk factor. Although there were only four specific clauses to address the risk factor, there were six IT-IS specific clauses, indicating that two of the IT-IS specific clauses were generic and not specific to addressing the willingness of users (end-users of the system) to be involved in and co-operate with the project risk factors.

Overall, in only two (10%) of the 20 cases where issues were encountered contract clauses had been invoked to resolve these issues.

Of the two cases where contract clauses had been invoked, one (50%) was successfully resolved.

4.1.5.8 Limited user involvement due to capabilities in a new system being vastly different from existing systems

The consolidated results are presented in Table 4.37.

Table 3.37: Limited user involvement due to capabilities in new system being vastly different from existing systems

Have you encountered project risks related to this item? Y/N	<u>Yes</u>	<u>No</u>	
	21	3	
Were there contract clauses in place to specifically address this item? Y/N	<u>Yes</u>	<u>No</u>	
	8	16	
Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other)	<u>NEC/FIDIC</u>	<u>Custom</u>	<u>N/A</u>
	12	9	3
Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	<u>Custom</u>	<u>Standard</u>	<u>N/A</u>
	12	7	5
If clauses were in place, were these generic or specifically related to Information Technology/Systems (IT-IS) projects? Generic/IT-IS/NA	<u>IT-IS</u>	<u>Generic</u>	<u>N/A</u>
	8	10	6
Was it ever required to invoke these clauses? Y/N/NA	<u>Y</u>	<u>N</u>	<u>N/A</u>
	5	8	11
If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	<u>Invoked and Y</u>	<u>Invoked and N</u>	<u>Not Invoked or N/A</u>
	5	0	19

Limited user involvement due to capabilities in a new system being vastly different from existing systems as a risk factor was encountered by 21 (87.5%) of the 24 respondents. This risk factor seems, however, to be addressed in contract clauses as in eight cases there were specific clauses in place to address it. Of these eight cases which had specific clauses, all had IT-IS specific clauses.

Overall, in only five of the 21 (23.8%) cases where issues were encountered contract clauses had been invoked to resolve these issues.

Of the five cases where contract clauses had been invoked, all five (100%) were successfully resolved.

4.1.5.9 Support teams and users perceive the new system as a threat

The consolidated results are indicated in Table 4.38.

Table 4.38: Support teams and users perceive new system as a threat

Have you encountered project risks related to this item? Y/N	<u>Yes</u>	<u>No</u>	
	21	3	
Were there contract clauses in place to specifically address this item? Y/N	<u>Yes</u>	<u>No</u>	
	3	21	
Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other)	<u>NEC/FIDIC</u>	<u>Custom</u>	<u>N/A</u>
	10	9	5
Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	<u>Custom</u>	<u>Standard</u>	<u>N/A</u>
	9	7	8
If clauses were in place, were these generic or specifically related to Information Technology/Systems (IT-IS) projects? Generic/IT-IS/NA	<u>IT-IS</u>	<u>Generic</u>	<u>N/A</u>
	6	8	10
Was it ever required to invoke these clauses? Y/N/NA	<u>Y</u>	<u>N</u>	<u>N/A</u>
	2	8	14
If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	<u>Invoked and Y</u>	<u>Invoked and N</u>	<u>Not Invoked or N/A</u>
	1	1	22

The risk factor that support teams and users perceive the new system as a threat was encountered by 21 (87.5%) of the 24 respondents. This risk factor is, however, not well addressed in contract clauses as only three cases had specific clauses in place to address this risk factor. Although there were only three specific clauses to address the risk factor, there were six IT-IS specific clauses, indicating that three of the IT-IS specific clauses were generic and not specific to addressing the risk factor that support teams and users perceive the new system as a threat.

Overall, in only two (9.5%) of the 21 cases where issues were encountered contract clauses had been invoked to resolve them.

Of the two cases where contract clauses had been invoked, one (50%) was successfully resolved.

4.1.5.10 Motivation and maintaining morale of team members throughout a project

The consolidated results are shown in Table 4.39.

Table 4.39: Motivation and maintaining morale of team members throughout a project

Have you encountered project risks related to this item? Y/N	<u>Yes</u>	<u>No</u>	
	23	1	
Were there contract clauses in place to specifically address this item? Y/N	<u>Yes</u>	<u>No</u>	
	1	23	
Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other)	<u>NEC/FIDIC</u>	<u>Custom</u>	<u>N/A</u>
	12	7	5
Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	<u>Custom</u>	<u>Standard</u>	<u>N/A</u>
	10	6	8
If clauses were in place, were these generic or specifically related to Information Technology/Systems (IT-IS) projects? Generic/IT-IS/NA	<u>IT-IS</u>	<u>Generic</u>	<u>N/A</u>
	4	9	11
Was it ever required to invoke these clauses? Y/N/NA	<u>Y</u>	<u>N</u>	<u>N/A</u>
	1	8	15
If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	<u>Invoked and Y</u>	<u>Invoked and N</u>	<u>Not Invoked or N/A</u>
	0	1	23

Motivation and maintaining the morale of team members throughout a project as a risk factor was encountered by 23 (95.8%) of the 24 respondents. This risk factor is, however, not well addressed in contract clauses as only one case had specific clauses in place to address it. Although there was only one specific clause to address the risk factor, there were four IT-IS specific clauses, indicating that three of the IT-IS specific clauses were generic and not specific to addressing motivation and maintaining morale of team members throughout a project risk factors.

Overall, in only one (4.3%) of the 23 cases where issues were encountered contract clauses had been invoked to resolve these issues.

This single case where contract clauses had been invoked was not resolved.

This risk factor had the highest incidence of occurrence (23 times), yet also the lowest incidence of specific contract clauses being in place in only one instance.

This risk factor was also the only risk factor where there was no resolution through invoking contract clauses.

4.1.5.11 Turnover of key project team members through the project lifecycle

The consolidated results are shown in Table 4.40.

Table 4.40: Turnover of key project team members through the project lifecycle

Have you encountered project risks related to this item? Y/N	<u>Yes</u>	<u>No</u>	
	21	3	
Were there contract clauses in place to specifically address this item? Y/N	<u>Yes</u>	<u>No</u>	
	12	12	
Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other)	<u>NEC/FIDIC</u>	<u>Custom</u>	<u>N/A</u>
	15	8	1
Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	<u>Custom</u>	<u>Standard</u>	<u>N/A</u>
	11	9	4
If clauses were in place, were these generic or specifically related to Information Technology/Systems (IT-IS) projects? Generic/IT-IS/NA	<u>IT-IS</u>	<u>Generic</u>	<u>N/A</u>
	6	12	6
Was it ever required to invoke these clauses? Y/N/NA	<u>Y</u>	<u>N</u>	<u>N/A</u>
	8	7	9
If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	<u>Invoked and Y</u>	<u>Invoked and N</u>	<u>Not Invoked or N/A</u>
	5	3	16

The turnover of key project team members through the project lifecycle was encountered by 21 (87.5%) of the 24 respondents. This risk factor seems, however, to be addressed in contract clauses as in 12 cases there were specific clauses in place to address it. Of these 12 cases which had specific clauses, six had IT-IS specific clauses.

Overall, in eight (38.1%) of the 21 cases where issues were encountered contract clauses had been invoked to resolve these issues.

Of the eight cases where contract clauses had been invoked, five (62.5%) were successfully resolved.

4.1.6 Resource related risk factors consolidated results

The consolidated results for the resource related risk factors category are presented in Table 4.41.

Table 4.41: Resource related risk factors consolidated results

Have you encountered project risks related to this item? Y/N	<u>Yes</u>	<u>No</u>	
	232	32	
Were there contract clauses in place to specifically address this item? Y/N	<u>Yes</u>	<u>No</u>	
	79	185	
Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other)	<u>NEC/FIDIC</u>	<u>Custom</u>	<u>N/A</u>
	133	94	37
Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	<u>Custom</u>	<u>Standard</u>	<u>N/A</u>
	119	88	57
If clauses were in place, were these generic or specifically related to Information Technology/Systems (IT-IS) projects? Generic/IT-IS/NA	<u>IT-IS</u>	<u>Generic</u>	<u>N/A</u>
	76	112	76
Was it ever required to invoke these clauses? Y/N/NA	<u>Y</u>	<u>N</u>	<u>N/A</u>
	55	89	120
If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	<u>Invoked and Y</u>	<u>Invoked and N</u>	<u>Not Invoked or N/A</u>
	33	22	209

For resource related risk factors, issues were encountered by 232 (87.9%) out of the total of 264 responses. This was the second highest rate of issues encountered on all the risk factor categories.

In this category contract clauses were only in place for 79 (29.9%) of 264 responses; it was the second lowest incidence of all the risk factor categories.

Standardised contracts (NEC/FIDIC) were 133 out of 264; thus 50%.

In this category clauses specific to IT-IS were found in 76 (96.2%) of the 79 responses that utilised clauses. Consequently, resource related risk factors was the category with the highest percentage of IT-IS specific clauses.

In this category clauses were invoked 55 times. The contract clauses were successfully utilised to resolve the issue 33 (60%) times. This was the second lowest resolution rate off all the risk factor categories.

The Pearson correlation coefficient between having specific clauses in place and resolving the issues through contract clauses for resource related risk factors is:

$$r = 0.914663927$$

It shows a clear correlation between the existence of risk factor specific contract clauses and the resolution of issues related to resource related risk factors.

The Pearson correlation coefficient between having specific IT-IS related clauses in place (no comma) and invoking these contract clauses to resolve project resource related risk factors is:

$$r = 0.673395989$$

It shows a clear correlation between the existence of IT-IS specific contract clauses and the invocation of contract clauses to resolve resource related risk factors.

The Pearson correlation coefficient between having specific IT-IS related clauses in place and successfully utilising these contract clauses to resolve resource related risk factors, is:

$$r = 0.677591643$$

It shows a correlation between the existence of IT-IS specific contract clauses and the invocation of contract clauses to resolve resource related risk factors.

The correlation analysis of the results indicated that there was a direct correlation where specific IT-IS clauses were in place and issues did arise, to the successful resolution of resource related risk factors. The success rate of resolving the resource related risk factors where IT-IS specific clauses are in place is 60%.

The high correlation coefficient and resolution rate indicate that should more projects have specific IT-IS contract clauses to address resource related risk factors; these risk factors can be more effectively mitigated should they arise.

4.1.7 Technology related risk factors

4.1.7.1 Implementation of new or latest technology

The consolidated results are shown in Table 4.42.

Table 4.42: Implementation of new or latest technology

Have you encountered project risks related to this item? Y/N	<u>Yes</u>	<u>No</u>	
	19	5	
Were there contract clauses in place to specifically address this item? Y/N	<u>Yes</u>	<u>No</u>	
	6	18	
Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other)	<u>NEC/FIDIC</u>	<u>Custom</u>	<u>N/A</u>
	13	8	3
Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	<u>Custom</u>	<u>Standard</u>	<u>N/A</u>
	11	7	6
If clauses were in place, were these generic or specifically related to Information Technology/Systems (IT-IS) projects? Generic/IT-IS/NA	<u>IT-IS</u>	<u>Generic</u>	<u>N/A</u>
	7	9	8
Was it ever required to invoke these clauses? Y/N/NA	<u>Y</u>	<u>N</u>	<u>N/A</u>
	4	8	12
If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	<u>Invoked and Y</u>	<u>Invoked and N</u>	<u>Not Invoked or N/A</u>
	3	1	20

The implementation of new or latest technology was encountered by 19 (87.5%) of the 24 respondents. In only six cases were there specific clauses in place to address this risk factor. Although there were only six specific clauses to address the risk factor, there were seven IT-IS specific clauses, indicating that one of the IT-IS specific clauses was generic and not specific to addressing implementation of new or latest technology risk factors.

Overall, in four (21.5%) of the 19 cases where issues were encountered contract clauses had been invoked to resolve these issues.

Of the four cases where contract clauses had been invoked, three (75%) were successfully resolved.

4.1.7.2 Availability and capacity constraints on technical communications infrastructure

The consolidated results are shown in Table 4.43.

Table 4.43: Availability and capacity constraints on technical communications infrastructure

Have you encountered project risks related to this item? Y/N	<u>Yes</u>	<u>No</u>	
	17	7	
Were there contract clauses in place to specifically address this item? Y/N	<u>Yes</u>	<u>No</u>	
	11	13	
Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other)	<u>NEC/FIDIC</u>	<u>Custom</u>	<u>N/A</u>
	12	8	4
Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	<u>Custom</u>	<u>Standard</u>	<u>N/A</u>
	10	8	6
If clauses were in place, were these generic or specifically related to Information Technology/Systems (IT-IS) projects? Generic/IT-IS/NA	<u>IT-IS</u>	<u>Generic</u>	<u>N/A</u>
	7	10	7
Was it ever required to invoke these clauses? Y/N/NA	<u>Y</u>	<u>N</u>	<u>N/A</u>
	7	6	11
If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	<u>Invoked and Y</u>	<u>Invoked and N</u>	<u>Not Invoked or N/A</u>
	3	4	17

The availability and capacity constraints on technical communications infrastructure were encountered by 17 (70.8%) of the 24 respondents (70.8%). This risk factor seems, however, to be addressed in contract clauses as in 11 cases there were specific clauses in place to address it. Of these, one case had specific clauses and seven had IT-IS specific clauses.

Overall, in seven (41.2%) of the 17 cases where issues were encountered contract clauses had been invoked to resolve these issues.

Of the seven cases where contract clauses had been invoked, only three (42.9%) were successfully resolved.

4.1.7.3 Technical complexity

The consolidated results are presented in Table 4.44.

Table 4.44: Technical complexity

Have you encountered project risks related to this item? Y/N	<u>Yes</u>	<u>No</u>	
	22	2	
Were there contract clauses in place to specifically address this item? Y/N	<u>Yes</u>	<u>No</u>	
	5	19	
Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other)	<u>NEC/FIDIC</u>	<u>Custom</u>	<u>N/A</u>
	13	8	3
Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	<u>Custom</u>	<u>Standard</u>	<u>N/A</u>
	12	6	6
If clauses were in place, were these generic or specifically related to Information Technology/Systems (IT-IS) projects? Generic/IT-IS/NA	<u>IT-IS</u>	<u>Generic</u>	<u>N/A</u>
	5	10	9
Was it ever required to invoke these clauses? Y/N/NA	<u>Y</u>	<u>N</u>	<u>N/A</u>
	5	6	13
If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	<u>Invoked and Y</u>	<u>Invoked and N</u>	<u>Not Invoked or N/A</u>
	2	3	19

Technical complexity was encountered by 22 (91.7%) of the 24 respondents. In only five cases were there specific clauses in place to address this risk factor. Of these five cases which had specific clauses, all five had IT-IS specific clauses.

Overall, in five (22.7%) of the 19 cases where issues were encountered contract clauses had been invoked to resolve these issues.

Of the five cases where contract clauses had been invoked, two (40%) were successfully resolved.

4.1.7.4 Goldplating

The consolidated results are presented in Table 4.45.

Table 4.45: Goldplating

Have you encountered project risks related to this item? Y/N	<u>Yes</u>	<u>No</u>	
	17	7	
Were there contract clauses in place to specifically address this item? Y/N	<u>Yes</u>	<u>No</u>	
	7	17	
Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other)	<u>NEC/FIDIC</u>	<u>Custom</u>	<u>N/A</u>
	12	7	5
Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	<u>Custom</u>	<u>Standard</u>	<u>N/A</u>
	9	7	8
If clauses were in place, were these generic or specifically related to Information Technology/Systems (IT-IS) projects? Generic/IT-IS/NA	<u>IT-IS</u>	<u>Generic</u>	<u>N/A</u>
	6	8	10
Was it ever required to invoke these clauses? Y/N/NA	<u>Y</u>	<u>N</u>	<u>N/A</u>
	3	7	14
If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	<u>Invoked and Y</u>	<u>Invoked and N</u>	<u>Not Invoked or N/A</u>
	1	2	21

Goldplating was encountered by 17 (70.8%) of the 24 respondents. In only seven cases were there specific clauses in place to address this risk factor. Of these seven cases which had specific clauses, six had IT-IS specific clauses.

Overall, in only three (17.6%) of the 17 cases where issues were encountered contract clauses had been invoked to resolve these issues.

Of the three cases where contract clauses had been invoked, only one (33.3%) case was successfully resolved.

4.1.8 Technology related risk factors consolidated results

The consolidated results for the technology related risk factors category are presented in Table 4.46.

Table 4.46: Technology related risk factors consolidated results

Have you encountered project risks related to this item? Y/N	<u>Yes</u>	<u>No</u>	
	75	21	
Were there contract clauses in place to specifically address this item? Y/N	<u>Yes</u>	<u>No</u>	
	29	67	
Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other)	<u>NEC/FIDIC</u>	<u>Custom</u>	<u>N/A</u>
	50	31	15
Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	<u>Custom</u>	<u>Standard</u>	<u>N/A</u>
	42	28	26
If clauses were in place, were these generic or specifically related to Information Technology/Systems (IT-IS) projects? Generic/IT-IS/NA	<u>IT-IS</u>	<u>Generic</u>	<u>N/A</u>
	25	37	34
Was it ever required to invoke these clauses? Y/N/NA	<u>Y</u>	<u>N</u>	<u>N/A</u>
	19	27	50
If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	<u>Invoked and Y</u>	<u>Invoked and N</u>	<u>Not Invoked or N/A</u>
	9	10	77

Technology related risk factors issues were encountered by 75 (78.1%) of the 96 responses. This was the second highest rate of issues encountered between all risk factor categories. It is of interest to note that resource related risk factors were encountered more frequently on IT-IS projects (87.9%) than technology related risk factors (78.1%).

In this category contract clauses were in place for 29 (30.2%) out of the 96 responses; this was the second highest incidence of all the risk factor categories.

Standardised contracts (NEC/FIDIC) were 50 out of 96 responses; thus 52%.

In this category clauses specific to IT-IS were found in 25 (86.2%) of the 29 responses that utilised clauses. Technology related risk factors were therefore the category with the second lowest percentage of IT-IS specific clauses.

In this category clauses were invoked 19 times; nine times (47.4%) the contract clauses were successfully utilised to resolve the issue. It was the lowest resolution rate based off all risk factor categories.

The Pearson correlation coefficient between having specific clauses in place and resolving the issues through contract clauses for technology related risk factors is:

$$r = 0.364046866$$

It shows a correlation between the existence of risk factor specific contract clauses and the resolution of issues related to technology related risk factors. In comparison to the other risk factors categories analysed in this document, the correlation is noticeably lower. This lower coefficient may be due to the smaller number of risk factors in this category.

The Pearson correlation coefficient between having specific IT-IS related clauses in place and invoking these contract clauses to resolve technology related risk factors, is:

$$r = 0.254823596$$

It shows a correlation between the existence of IT-IS specific contract clauses and the invocation of contract clauses to resolve technology related risk factors. In comparison to the other risk factors categories analysed in this document, the correlation is much lower. This lower coefficient may be due to the smaller number of risk factors in this category.

The Pearson correlation coefficient between having specific IT-IS related clauses in place and successfully utilising these contract clauses to resolve technology related risk factors, is:

$$r = 0.636363636$$

It shows a correlation between the existence of IT-IS specific contract clauses and the invocation of contract clauses to resolve technology related risk factors.

The correlation analysis of the results indicated that there was a direct correlation where specific IT-IS clauses were in place (and issues did arise) to the successful resolution of technology related risk factors.

Although a high percentage (86.2%) of IT-IS specific clauses were utilised in relation to other risk factor categories, the overall incidence of having specific risk factor related contract clauses in place was only 30.2%. The impact of this low percentage of risk factor specific clauses can be seen in the overall low resolution rate of 12%; thereby confirming the $r = 0.636363636$ correlation coefficient between having specific IT-IS related clauses in place and successfully utilising these contract clauses to resolve technology related risk factors.

5. CONCLUSIONS

An overall summary of the results of this research is given in Table 5.1.

Table 5.1: Overall summary of results

Have you encountered project risks related to this item? Y/N	<u>Yes</u>	<u>No</u>	
	779	229	
Were there contract clauses in place to specifically address this item? Y/N	<u>Yes</u>	<u>No</u>	
	388	620	
Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other)	<u>NEC/FIDIC</u>	<u>Custom</u>	<u>N/A</u>
	531	344	133
Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	<u>Custom</u>	<u>Standard</u>	<u>N/A</u>
	434	377	197
If clauses were in place, were these generic or specifically related to Information Technology/Systems (IT-IS) projects? Generic/IT-IS/NA	<u>IT-IS</u>	<u>Generic</u>	<u>N/A</u>
	310	433	265
Was it ever required to invoke these clauses? Y/N/NA	<u>Y</u>	<u>N</u>	<u>N/A</u>
	241	333	434
If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	<u>Invoked and Y</u>	<u>Invoked and N</u>	<u>Not Invoked or N/A</u>
	156	85	767

Out of the 1 008 responses, 779 (77.3%) encountered risk factors. This clearly validates the work done by Kappelman et al. (2006:31-36) in prioritising these risk factors.

The respondents in this study were evenly divided between individuals primarily receiving IT-IS services (12), and individuals primarily providing IT-IS services (12). It is generally standard practice for companies primarily receiving IT-IS services is to utilise standardised contracts, and for companies primarily providing IT-IS services to utilise contracts specific to the company. This trend is validated in the responses to this study in that 531 (52.7%) of the 1 008 responses utilised NEC or FIDIC standard contracts.

The incidences where contract clauses were in place to address these specific risk factors were overall low, indicating only 388 (38.5%) of 1 008 responses. This shows that limited attention was given to mitigating these high incidences of risk

factors through contract clauses. Out of this base of incidents where contract clauses were in place (388 responses) there was, however, a high incidence (310 or 80%) of these clauses that was IT-IS specific.

The overall Pearson correlation coefficient between having specific clauses in place and resolving the issues through contract clauses is:

$$r = 0.789302502$$

It shows a clear correlation between the existence of risk factor specific contract clauses and the resolution of issues.

The overall Pearson correlation coefficient between having specific IT-IS related clauses in place and invoking these contract clauses, is:

$$r = 0.720562636$$

It shows a clear correlation between the existence of IT-IS specific contract clauses and the invocation of contract clauses.

The overall Pearson correlation coefficient between having specific IT-IS related clauses in place and successfully utilising these contract clauses, is:

$$r = 0.569522575$$

It shows a correlation between the existence of IT-IS specific contract clauses and the invocation of contract clauses.

Based on the confidence interval of 19.42 as calculated in Section 3.3.3, 'Impact of delimitation, population and sampling on the study', the upper and lower levels for the correlation coefficients can be represented as illustrated in Table 5.2.

Table 5.2: Correlation coefficient with confidence level

Correlated attributes:	Lower confidence level (-19.42%)	Pearson (r)	Upper confidence level (+19.42)
Specific clauses in place and resolving the issues through contract clauses	0.636022	0.789302502	0.942585
Specific IT-IS related clauses in place and invoking these contract clauses	0.580629	0.720562636	0.860496
Specific IT-IS related clauses in place and successfully utilising these contract clauses	0.458921	0.569522575	0.680124

5.1 Specific conclusions

The clearest overall correlation in this study was between having specific clauses in place and resolving the issues through contract clauses. Even at the lowest confidence level, the correlation was $r = 0.636022$ which indicates a very strong correlation between having specific clauses in place and resolving the issues through contract clauses. At the highest confidence level, the correlation was $r = 0.942585$ which is extremely close to a total positive correlation.

The correlation coefficients for having specific IT-IS related clauses in place and invoking these contract clauses as well as having both specific IT-IS related clauses in place and successfully utilising these contract clauses, even at the lowest confidence level ($r = 0.580629$ and $r = 0.458921$ respectively), represented a strong correlation. All three of these correlations are therefore strong enough, even at the lowest confidence level, to represent a measurable relationship between contract clauses and successfully resolving issues.

5.2 General conclusions

After taking into consideration the confidence level calculations on the coefficient correlation results, the analysis of these results indicated that there is a direct correlation between the existence of contract clauses and utilisation of these clauses to resolve issues.

The correlation coefficients were therefore measurable results to confirm that projects which spend time and effort to understand the possible risk factors well enough to write specific contract clauses to address the risk factors, are more likely to not only invoke contract clauses to resolve the issues but also subsequently to successfully resolve the issues.

5.3 Recommendations

From the overall correlation coefficients it is clear that there is a direct and measurable correlation ($r = 0.789302502$) between having contract clauses which specifically address high risk factor elements and the resolution of these risk factors.

It is therefore recommended that at least the 42 risk factors evaluated in this document should be analysed for the development of IT-IS industry standard clauses which can be included in all relevant IT-IS contracts. When it comes to further research in this area the following suggestions are offered:

- A wider, preferably nationwide, group could be contacted to offer more in-depth or even contrasting analysis of the four risk factors identified. It is accepted that other factors not noted as the four main or 42 sub-items could produce other data and conclusions.
- Further risk factors could be identified and vigorously examined.
- Research into designing specific IT and IS contracts could be undertaken rather than relying on established contracts in other economic environments. As these would be specific to the IT and IS industry it is not inconceivable that different risk factors may be identified leading to different study conclusions.
- A deeper analysis of failed contracts should be undertaken to identify the risk factors most common in these failures.

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APPENDIX A – SURVEY QUESTIONNAIRE EXAMPLE

During the analysis of statistics on the failure rate of Information Technology projects it becomes apparent that a large number of Information Technology projects fail or have significant challenges. Further analysis shows that This survey lists the risks on the left, numbered 1 to 42 and the questions across in 7 columns.
The minimum response required for each question is indicated at the end of the question. Although the minimum response will be adequate to assist in the evaluation, you are kindly requested to add additional information

		Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify in column J)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA
1	Lack of commitment from top senior management (Schmidt, et al., 2001)		(e.g. Assignment of sponsor and clearly defined responsibilities)					
2	Corporate instability and/or organisational change causing instability in the project		(e.g. ensuring support for the project should organisational changes occur)					
3	Lack of client ownership or de-prioritisation of the project							
4	Lack of supplier ownership or de-prioritisation of the project		(e.g. key resources being assigned elsewhere)					
5	Adversarial relationships and loss of trust between vendor and client							
6	No formal alignment of project with business strategy							
7	Communications breakdown between parties involved							
8	Functional Requirements not documented or unrealistic							
9	Performance Requirements not documented or unrealistic							
10	Reliability Requirements not documented or unrealistic							
11	Project Scope not documented or partially documented							
12	Ineffective or poorly trained project managers							
13	Inadequate or non-functional change control process							
14	Not well defined or lack of defined deliverable and associated deliverable dates							
15	Criteria defining project success inadequate or undefined							
16	No business case for the project							
17	No project status tracking or progress reporting							
18	Risk management, analysis and tracking not in place or inadequate							
19	Delivery deadline not aligned with project schedule or project schedule calculated based on delivery deadline and not effort required							
20	Management of project delays, revision of project based on delays encountered							
21	Documentation on planning and estimation lacking or inadequate							
22	Significant changes to the project, including Scope schedule or goals							
23	Roles and responsibilities of team members are not clearly defined							
24	Project communications lacking or not defined, including planning and resources							
25	Project management methodology not properly implemented or not being used at all							
26	Project charter not created or incomplete							
27	Key project deliverables are outside the locus of control of the project team							
28	Commitment and belief of project team members in meeting the project scope within schedule is low		(e.g. clauses related to staff morale or team dynamics)					
29	Key stakeholders are unavailable or only have limited availability for review sessions of project							
30	Skills, knowledge or experience of resources on project team are lacking							
31	Project resources are only part time assigned or become fully assigned to another project which is deemed of higher importance							
32	Over scheduling of subject matter experts							
33	Timely review and sign off on decisions, deliverables and documentation							
34	Willingness of users (end users of the system) to be involved in and co-operate with the project							
35	Limited user involvement due to capabilities in new system being vastly different from existing systems		(e.g. pre-training for super users)					
36	Support teams and users perceive new system as a threat							
37	Motivation and maintaining morale of team members throughout a project		(e.g. allowances for extended leave)					
38	Turnover of key project team members through the project lifecycle							
39	Implementation of new or latest technology							
40	Availability and capacity constraints on technical communications infrastructure							
41	Technical complexity							
42	Goldplating (unrealistic requirements related to the use of the system)		86					

APPENDIX B – SURVEY RESPONSES PER RESPONDENT

Respondent 1

		Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA
1	Lack of commitment from top senior management (Schmidt, et al., 2001)	Y	N	Custom	Custom	IT-IS	N	N/A
2	Corporate instability and/or organisational change causing instability in the project	Y	N	Custom	Custom	N/A	N	N/A
3	Lack of client ownership or de-prioritisation of the project	Y	N	Custom	Custom	IT-IS	N	N/A
4	Lack of supplier ownership or de-prioritisation of the project	N	N	Custom	Standard	GENERIC	N	N/A
5	Adversarial relationships and loss of trust between vendor and client	N	N	Custom	Custom	Generic	N	N/A
6	No formal alignment of project with business strategy	N	N	Custom	Custom	N/A	N	N/A
7	Communications breakdown between parties involved	N	N	Custom	Custom	IT-IS	N	N/A
8	Functional Requirements not documented or unrealistic	N	N	Custom	Standard	IT-IS	N	N/A
9	Performance Requirements not documented or unrealistic	Y	Y	Custom	Custom	IT-IS	Y	N
10	Reliability Requirements not documented or unrealistic	Y	Y	Custom	Custom	IT-IS	Y	N
11	Project Scope not documented or partially documented	Y	Y	Custom	Standard	IT-IS	N	N/A
12	Ineffective or poorly trained project managers	Y	N	Custom	Standard	IT-IS	N	N/A
13	Inadequate or non-functional change control process	Y	N	Custom	Standard	IT-IS	N	N/A
14	Not well defined or lack of defined deliverable and associated deliverable dates	N	N	Custom	Standard	Generic	N	N/A
15	Criteria defining project success inadequate or undefined	N	N	Custom	Standard	Generic	N	N/A
16	No business case for the project	N	N	Custom	Standard	Generic	N	N/A
17	No project status tracking or progress reporting	N	N	Custom	Standard	Generic	N	N/A
18	Risk management, analysis and tracking not in place or inadequate	N	N	Custom	Standard	IT-IS	N	N/A
19	Delivery deadline not aligned with project schedule or project schedule calculated based on delivery deadline and not effort required	N	N	Custom	Standard	Generic	N	N/A
20	Management of project delays, revision of project based on delays encountered	Y	N	Custom	Standard	Generic	N	N/A
21	Documentation on planning and estimation lacking or inadequate	Y	N	Custom	Standard	Generic	N	N/A
22	Significant changes to the project, including Scope schedule or goals	Y	Y	NEC	Standard	IT-IS	N	N/A
23	Roles and responsibilities of team members are not clearly defined	N	N	Custom	Standard	Generic	N	N/A
24	Project communications lacking or not defined, including planning and resources	N	N	Custom	Standard	Generic	N	N/A
25	Project management methodology not properly implemented or not being used at all	N	N	Custom	Standard	IT-IS	N	N/A
26	Project charter not created or incomplete	N	N	Custom	Standard	Generic	N	N/A
27	Key project deliverables are outside the locus of control of the project team	N	N	Custom	Standard	Generic	N	N/A
28	Commitment and belief of project team members in meeting the project scope within schedule is low	N	N	Custom	Standard	Generic	N	N/A
29	Key stakeholders are unavailable or only have limited availability for review sessions of project	Y	N	Custom	Standard	Generic	N	N/A
30	Skills, knowledge or experience of resources on project team are lacking	N	N	Custom	Standard	Generic	N	N/A
31	Project resources are only part time assigned or become fully assigned to another project which is deemed of higher importance	Y	N	Custom	Standard	Generic	N	N/A
32	Over scheduling of subject matter experts	Y	N	Custom	Standard	IT-IS	N	N/A
33	Timely review and sign off on decisions, deliverables and documentation	Y	N	Custom	Standard	Generic	N	N/A
34	Willingness of users (end users of the system) to be involved in and co-operate with the project	Y	N	Custom	Standard	Generic	N	N/A
35	Limited user involvement due to capabilities in new system being vastly different from existing systems	Y	N	Custom	Standard	IT-IS	N	N/A
36	Support teams and users perceive new system as a threat	Y	N	Custom	Standard	Generic	N	N/A
37	Motivation and maintaining morale of team members throughout a project	Y	N	Custom	Standard	Generic	N	N/A
38	Turnover of key project team members through the project lifecycle	Y	N	Custom	Standard	Generic	N	N/A
39	Implementation of new or latest technology	N	N	Custom	Standard	IT-IS	N	N/A
40	Availability and capacity constraints on technical communications infrastructure	N	N	Custom	Standard	Generic	N	N/A
41	Technical complexity	Y	N	Custom	Standard	IT-IS	N	N/A
42	Goldplating (unrealistic requirements related to the use of the system)	N	N	Custom	Standard	Generic	N	N/A

Respondent 2

	Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	
1	Lack of commitment from top senior management (Schmidt, et al., 2001)	Y	N	Custom	Custom	Generic	N	N/A
2	Corporate instability and/or organisational change causing instability in the project	Y	N	Custom	Custom	Generic	N	N/A
3	Lack of client ownership or de-prioritisation of the project	Y	N	Custom	Custom	Generic	N	N/A
4	Lack of supplier ownership or de-prioritisation of the project	Y	Y	NEC	Custom	IT-IS	Y	N
5	Adversarial relationships and loss of trust between vendor and client	Y	N	Custom	Custom	IT-IS	N	N/A
6	No formal alignment of project with business strategy	Y	N	Custom	Custom	IT-IS	N	N/A
7	Communications breakdown between parties involved	Y	N	Custom	Custom	IT-IS	N	N/A
8	Functional Requirements not documented or unrealistic	Y	N	Custom	Custom	IT-IS	N	N/A
9	Performance Requirements not documented or unrealistic	Y	N	NEC	Standard	IT-IS	Y	N
10	Reliability Requirements not documented or unrealistic	Y	N	NEC	Standard	IT-IS	Y	N
11	Project Scope not documented or partially documented	Y	N	Custom	Custom	IT-IS	N	N/A
12	Ineffective or poorly trained project managers	Y	N	NEC	Custom	Generic	Y	N
13	Inadequate or non-functional change control process	Y	N	Custom	Custom	Generic	N/A	N/A
14	Not well defined or lack of defined deliverable and associated deliverable dates	Y	N	Custom	Custom	IT-IS	N/A	N/A
15	Criteria defining project success inadequate or undefined	Y	N	Custom	Custom	IT-IS	N/A	N/A
16	No business case for the project	Y	N	Custom	Standard	IT-IS	N/A	N/A
17	No project status tracking or progress reporting	Y	N	Custom	Standard	Generic	N	N/A
18	Risk management, analysis and tracking not in place or inadequate	Y	N	Custom	Standard	Generic	N/A	N/A
19	Delivery deadline not aligned with project schedule or project schedule calculated based on delivery deadline and not effort required	Y	N	Custom	Standard	Generic	N/A	N/A
20	Management of project delays, revision of project based on delays encountered	Y	Y	Custom	Standard	IT-IS	N	N/A
21	Documentation on planning and estimation lacking or inadequate	Y	N	Custom	Standard	Generic	N	N/A
22	Significant changes to the project, including Scope schedule or goals	Y	N	Custom	Standard	Generic	Y	N
23	Roles and responsibilities of team members are not clearly defined	Y	N	Custom	Standard	Generic	Y	N
24	Project communications lacking or not defined, including planning and resources	Y	N	Custom	Standard	Generic	N	N/A
25	Project management methodology not properly implemented or not being used at all	Y	N	Custom	Standard	Generic	N	N/A
26	Project charter not created or incomplete	Y	N	Custom	Standard	IT-IS	N	N/A
27	Key project deliverables are outside the locus of control of the project team	Y	N	Custom	Standard	IT-IS	N	N/A
28	Commitment and belief of project team members in meeting the project scope within schedule is low	Y	N	Custom	Standard	IT-IS	N	N/A
29	Key stakeholders are unavailable or only have limited availability for review sessions of project	Y	N	Custom	Standard	IT-IS	N	N/A
30	Skills, knowledge or experience of resources on project team are lacking	Y	N	Custom	Standard	IT-IS	N	N/A
31	Project resources are only part time assigned or become fully assigned to another project which is deemed of higher importance	Y	N	Custom	Standard	IT-IS	N	N/A
32	Over scheduling of subject matter experts	Y	N	Custom	Standard	IT-IS	N	N/A
33	Timely review and sign off on decisions, deliverables and documentation	Y	N	Custom	Standard	IT-IS	N	N/A
34	Willingness of users (end users of the system) to be involved in and co-operate with the project	Y	N	Custom	Standard	IT-IS	N	N/A
35	Limited user involvement due to capabilities in new system being vastly different from existing systems	Y	N	Custom	Standard	IT-IS	N	N/A
36	Support teams and users perceive new system as a threat	N	N	Custom	Standard	IT-IS	N	N
37	Motivation and maintaining morale of team members throughout a project	Y	N	NEC	Standard	Generic	Y	N
38	Turnover of key project team members through the project lifecycle	Y	N	NEC	Standard	Generic	Y	N
39	Implementation of new or latest technology	Y	N	Custom	Standard	IT-IS	N	N
40	Availability and capacity constraints on technical communications infrastructure	N	N	Custom	Standard	IT-IS	N	N
41	Technical complexity	Y	N	Custom	Standard	Generic	Y	N
42	Goldplating (unrealistic requirements related to the use of the system)	Y	N	Custom	Standard	IT-IS	N	N/A

Respondent 3

		Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA
1	Lack of commitment from top senior management (Schmidt, et al., 2001)	Y	N	N/A	Custom	N/A	N/A	N/A
2	Corporate instability and/or organisational change causing instability in the project	Y	N	N/A	Custom	N/A	N/A	N/A
3	Lack of client ownership or de-prioritisation of the project	N	Y	N/A	Custom	IT-IS	N	N/A
4	Lack of supplier ownership or de-prioritisation of the project	Y	Y	N/A	Custom	IT-IS	Y	Y
5	Adversarial relationships and loss of trust between vendor and client	Y	Y	N/A	Custom	IT-IS	Y	Y
6	No formal alignment of project with business strategy	N	Y	N/A	Custom	IT-IS	N/A	N/A
7	Communications breakdown between parties involved	Y	Y	N/A	Custom	IT-IS	Y	Y
8	Functional Requirements not documented or unrealistic	N	Y	N/A	Custom	IT-IS	N/A	N/A
9	Performance Requirements not documented or unrealistic	N	Y	N/A	Custom	IT-IS	N/A	N/A
10	Reliability Requirements not documented or unrealistic	N	Y	N/A	Custom	IT-IS	N/A	N/A
11	Project Scope not documented or partially documented	N	Y	N/A	Custom	IT-IS	N/A	N/A
12	Ineffective or poorly trained project managers	Y	Y	N/A	Custom	IT-IS	Y	Y
13	Inadequate or non-functional change control process	Y	Y	N/A	Custom	IT-IS	Y	Y
14	Not well defined or lack of defined deliverable and associated deliverable dates	Y	Y	N/A	Custom	IT-IS	Y	N
15	Criteria defining project success inadequate or undefined	Y	Y	N/A	Custom	IT-IS	Y	N
16	No business case for the project	N	Y	N/A	Custom	IT-IS	N/A	N/A
17	No project status tracking or progress reporting	N	Y	N/A	Custom	IT-IS	N/A	N/A
18	Risk management, analysis and tracking not in place or inadequate	N	Y	N/A	Custom	IT-IS	N/A	N/A
19	Delivery deadline not aligned with project schedule or project schedule calculated based on delivery deadline and not effort required	Y	Y	N/A	Custom	IT-IS	Y	N
20	Management of project delays, revision of project based on delays encountered	Y	Y	N/A	Custom	IT-IS	Y	Y
21	Documentation on planning and estimation lacking or inadequate	N	Y	N/A	Custom	IT-IS	N/A	N/A
22	Significant changes to the project, including Scope schedule or goals	Y	Y	Custom	Custom	IT-IS	Y	Y
23	Roles and responsibilities of team members are not clearly defined	Y	Y	N/A	Custom	IT-IS	Y	Y
24	Project communications lacking or not defined, including planning and resources	Y	Y	N/A	Custom	IT-IS	Y	Y
25	Project management methodology not properly implemented or not being used at all	N	Y	N/A	Custom	IT-IS	N/A	N/A
26	Project charter not created or incomplete	N	N	N/A	Custom	IT-IS	N/A	N/A
27	Key project deliverables are outside the locus of control of the project team	Y	Y	N/A	Custom	IT-IS	N	N/A
28	Commitment and belief of project team members in meeting the project scope within schedule is low	Y	Y	N/A	Custom	IT-IS	N	N/A
29	Key stakeholders are unavailable or only have limited availability for review sessions of project	N	Y	N/A	Custom	IT-IS	N	N/A
30	Skills, knowledge or experience of resources on project team are lacking	N	Y	N/A	Custom	IT-IS	N	N/A
31	Project resources are only part time assigned or become fully assigned to another project which is deemed of higher importance	Y	Y	N/A	Custom	IT-IS	Y	Y
32	Over scheduling of subject matter experts	Y	Y	N/A	Custom	IT-IS	Y	Y
33	Timely review and sign off on decisions, deliverables and documentation	Y	Y	N/A	Custom	IT-IS	Y	N
34	Willingness of users (end users of the system) to be involved in and co-operate with the project	Y	Y	N/A	Custom	IT-IS	N	N/A
35	Limited user involvement due to capabilities in new system being vastly different from existing systems	Y	Y	N/A	Custom	IT-IS	N	N/A
36	Support teams and users perceive new system as a threat	Y	N	N/A	Custom	IT-IS	N	N/A
37	Motivation and maintaining morale of team members throughout a project	Y	N	N/A	Custom	IT-IS	N	N/A
38	Turnover of key project team members through the project lifecycle	Y	Y	N/A	Custom	IT-IS	Y	Y
39	Implementation of new or latest technology	Y	Y	N/A	Custom	IT-IS	N	N/A
40	Availability and capacity constraints on technical communications infrastructure	Y	Y	N/A	Custom	IT-IS	Y	Y
41	Technical complexity	Y	Y	N/A	Custom	IT-IS	N	N/A
42	Goldplating (unrealistic requirements related to the use of the system)	N	Y	N/A	Custom	IT-IS	N	N/A

Respondent 4

		Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA
1	Lack of commitment from top senior management (Schmidt, et al., 2001)	Y	N	NEC	Standard	Generic	N/A	N/A
2	Corporate instability and/or organisational change causing instability in the project	Y	N	NEC	Standard	GENERIC	N/A	N/A
3	Lack of client ownership or de-prioritisation of the project	Y	N	NEC	Standard	Generic	N/A	N/A
4	Lack of supplier ownership or de-prioritisation of the project	Y	Y	NEC	Standard	GENERIC	N/A	N/A
5	Adversarial relationships and loss of trust between vendor and client	Y	N	NEC	Standard	Generic	N/A	N/A
6	No formal alignment of project with business strategy	Y	N	NEC	Standard	Generic	N/A	N/A
7	Communications breakdown between parties involved	Y	N	NEC	Standard	Generic	N/A	N/A
8	Functional Requirements not documented or unrealistic	Y	N	NEC	Standard	Generic	N/A	N/A
9	Performance Requirements not documented or unrealistic	Y	Y	NEC	STANDARD	Generic	Y	N
10	Reliability Requirements not documented or unrealistic	Y	Y	NEC	Standard	GENERIC	Y	N
11	Project Scope not documented or partially documented	Y	Y	NEC	Standard	Generic	N/A	N/A
12	Ineffective or poorly trained project managers	Y	N	NEC	Standard	GENERIC	N/A	N/A
13	Inadequate or non-functional change control process	Y	N	NEC	Standard	Generic	N/A	N/A
14	Not well defined or lack of defined deliverable and associated deliverable dates	Y	N	NEC	Standard	Generic	N/A	N/A
15	Criteria defining project success inadequate or undefined	Y	N	NEC	Standard	Generic	N/A	N/A
16	No business case for the project	Y	N	NEC	Standard	Generic	N/A	N/A
17	No project status tracking or progress reporting	Y	N	NEC	Standard	GENERIC	N/A	N/A
18	Risk management, analysis and tracking not in place or inadequate	Y	N	NEC	Standard	Generic	N/A	N/A
19	Delivery deadline not aligned with project schedule or project schedule calculated based on delivery deadline and not effort required	Y	N	NEC	Standard	Generic	N/A	N/A
20	Management of project delays, revision of project based on delays encountered	Y	N	NEC	Standard	Generic	N/A	N/A
21	Documentation on planning and estimation lacking or inadequate	Y	N	NEC	Standard	Generic	N/A	N/A
22	Significant changes to the project, including Scope schedule or goals	Y	Y	NEC	Standard	Generic	N/A	N/A
23	Roles and responsibilities of team members are not clearly defined	Y	N	NEC	Standard	Generic	N/A	N/A
24	Project communications lacking or not defined, including planning and resources	Y	N	NEC	Standard	Generic	N/A	N/A
25	Project management methodology not properly implemented or not being used at all	Y	N	NEC	Standard	Generic	N/A	N/A
26	Project charter not created or incomplete	Y	N	NEC	Standard	GENERIC	N/A	N/A
27	Key project deliverables are outside the locus of control of the project team	Y	N	NEC	Standard	Generic	N/A	N/A
28	Commitment and belief of project team members in meeting the project scope within schedule is low	Y	N	NEC	Standard	Generic	N/A	N/A
29	Key stakeholders are unavailable or only have limited availability for review sessions of project	Y	N	NEC	Standard	Generic	N/A	N/A
30	Skills, knowledge or experience of resources on project team are lacking	Y	N	NEC	Standard	Generic	N/A	N/A
31	Project resources are only part time assigned or become fully assigned to another project which is deemed of higher importance	Y	N	NEC	Standard	Generic	N/A	N/A
32	Over scheduling of subject matter experts	Y	N	NEC	Standard	Generic	N/A	N/A
33	Timely review and sign off on decisions, deliverables and documentation	Y	Y	NEC	Standard	Generic	N/A	N/A
34	Willingness of users (end users of the system) to be involved in and co-operate with the project	Y	N	NEC	Standard	Generic	N/A	N/A
35	Limited user involvement due to capabilities in new system being vastly different from existing systems	Y	N	NEC	Standard	Generic	N/A	N/A
36	Support teams and users perceive new system as a threat	Y	N	NEC	Standard	Generic	N/A	N/A
37	Motivation and maintaining morale of team members throughout a project	Y	N	NEC	Standard	Generic	N/A	N/A
38	Turnover of key project team members through the project lifecycle	Y	Y	NEC	Custom	Generic	N/A	N/A
39	Implementation of new or latest technology	Y	N	NEC	Standard	Generic	N/A	N/A
40	Availability and capacity constraints on technical communications infrastructure	Y	N	NEC	Standard	Generic	N/A	N/A
41	Technical complexity	Y	N	NEC	Standard	Generic	N/A	N/A
42	Goldplating (unrealistic requirements related to the use of the system)	Y	N	NEC	Standard	Generic	N/A	N/A

Respondent 5

		Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA
1	Lack of commitment from top senior management (Schmidt, et al., 2001)	Y	N	NEC	Standard	Generic	N	N/A
2	Corporate instability and/or organisational change causing instability in the project	Y	N	NEC	Standard	Generic	N	N/A
3	Lack of client ownership or de-prioritisation of the project	N		N/A	N/A	N/A	N/A	N/A
4	Lack of supplier ownership or de-prioritisation of the project	Y	Y	Custom	Custom	IT-IS	Y	Y
5	Adversarial relationships and loss of trust between vendor and client	Y	Y	NEC	Standard	Generic	Y	Y
6	No formal alignment of project with business strategy	N		N/A	N/A	N/A	N/A	N/A
7	Communications breakdown between parties involved	Y	N	Custom	Standard	Generic	N	N/A
8	Functional Requirements not documented or unrealistic	Y	N	Custom	Standard	IT-IS	Y	N
9	Performance Requirements not documented or unrealistic	Y	N	N/A	Standard	IT-IS	Y	N
10	Reliability Requirements not documented or unrealistic	Y	N	Custom	Custom	IT-IS	Y	N
11	Project Scope not documented or partially documented	Y	Y	Custom	Standard	N/A	Y	N
12	Ineffective or poorly trained project managers	Y	N	NEC	Standard	N/A	N	N/A
13	Inadequate or non-functional change control process	Y	N	NEC	Standard	N/A	N	N/A
14	Not well defined or lack of defined deliverable and associated deliverable dates	Y	Y	NEC	Standard	Generic	N	N/A
15	Criteria defining project success inadequate or undefined	Y	N	Custom	Standard	N/A	N	N/A
16	No business case for the project	Y	Y	Custom	Custom	IT-IS	N	N/A
17	No project status tracking or progress reporting	N	N/A	N/A	N/A	N/A	N/A	N/A
18	Risk management, analysis and tracking not in place or inadequate	Y	Y	Custom	Standard	Generic	N	N/A
19	Delivery deadline not aligned with project schedule or project schedule calculated based on delivery deadline and not effort required	N	N/A	N/A	N/A	N/A	N/A	N/A
20	Management of project delays, revision of project based on delays encountered	Y	Y	NEC	Standard	Generic	Y	N
21	Documentation on planning and estimation lacking or inadequate	N	N/A	N/A	N/A	N/A	N/A	N/A
22	Significant changes to the project, including Scope schedule or goals	Y	Y	Custom	Standard	Generic	Y	Y
23	Roles and responsibilities of team members are not clearly defined	Y	Y	Custom	Standard	Generic	N	N/A
24	Project communications lacking or not defined, including planning and resources	Y	Y	Custom	Standard	Generic	Y	N
25	Project management methodology not properly implemented or not being used at all	Y	Y	Custom	Standard	Generic	N	N/A
26	Project charter not created or incomplete	Y	Y	Custom	Standard	GENERIC	N	N/A
27	Key project deliverables are outside the locus of control of the project team	Y	N	Custom	Standard	N/A	N/A	N/A
28	Commitment and belief of project team members in meeting the project scope within schedule is low	Y	N	Custom	Standard	N/A	N/A	N/A
29	Key stakeholders are unavailable or only have limited availability for review sessions of project	Y	N	N/A	Standard	N/A	N/A	N/A
30	Skills, knowledge or experience of resources on project team are lacking	Y	N	Custom	Standard	N/A	N/A	N/A
31	Project resources are only part time assigned or become fully assigned to another project which is deemed of higher importance	Y	Y	Nec	Standard	Generic	N	N/A
32	Over scheduling of subject matter experts	Y	N	Custom	Standard	N/A	N/A	N/A
33	Timely review and sign off on decisions, deliverables and documentation	Y	Y	Custom	Standard	Generic	Y	N
34	Willingness of users (end users of the system) to be involved in and co-operate with the project	Y	N	Custom	Standard	N/A	N/A	N/A
35	Limited user involvement due to capabilities in new system being vastly different from existing systems	Y	Y	Custom	Standard	Generic	N	N/A
36	Support teams and users perceive new system as a threat	Y	N	Custom	Standard	N/A	N/A	N/A
37	Motivation and maintaining morale of team members throughout a project	Y	N	Custom	Standard	N/A	N/A	N/A
38	Turnover of key project team members through the project lifecycle	Y	N	Custom	Standard	N/A	N/A	N/A
39	Implementation of new or latest technology	Y	N	NEC	Standard	N/A	N/A	N/A
40	Availability and capacity constraints on technical communications infrastructure	Y	Y	Custom	Standard	Generic	Y	N
41	Technical complexity	Y	N	Custom	Standard	N/A	N/A	N/A
42	Goldplating (unrealistic requirements related to the use of the system)	N	N/A	N/A	N/A	N/A	N/A	N/A

Respondent 6

	Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA
1	Lack of commitment from top senior management (Schmidt, et al., 2001)	Y	N	Custom	N/A	N/A	N/A
2	Corporate instability and/or organisational change causing instability in the project	Y	N	Custom	N/A	N/A	N/A
3	Lack of client ownership or de-prioritisation of the project	N	N	Custom	N/A	N/A	N/A
4	Lack of supplier ownership or de-prioritisation of the project	Y	Y	Custom	Custom	IT-IS	Y
5	Adversarial relationships and loss of trust between vendor and client	Y	Y	Custom	Custom	IT-IS	Y
6	No formal alignment of project with business strategy	N	N	Custom	N/A	N/A	N/A
7	Communications breakdown between parties involved	Y	Y	Custom	Custom	IT-IS	Y
8	Functional Requirements not documented or unrealistic	Y	Y	Custom	Custom	IT-IS	Y
9	Performance Requirements not documented or unrealistic	Y	Y	Custom	Custom	IT-IS	Y
10	Reliability Requirements not documented or unrealistic	Y	Y	Custom	Custom	IT-IS	Y
11	Project Scope not documented or partially documented	Y	Y	Custom	Custom	IT-IS	Y
12	Ineffective or poorly trained project managers	N	N	Custom	N/A	N/A	N/A
13	Inadequate or non-functional change control process	N	N	Custom	N/A	N/A	N/A
14	Not well defined or lack of defined deliverable and associated deliverable dates	N	N	Custom	N/A	N/A	N/A
15	Criteria defining project success inadequate or undefined	Y	N	Custom	N/A	N/A	N/A
16	No business case for the project	N	N	Custom	N/A	N/A	N/A
17	No project status tracking or progress reporting	N	N	Custom	N/A	N/A	N/A
18	Risk management, analysis and tracking not in place or inadequate	Y	Y	Custom	Custom	IT-IS	Y
19	Delivery deadline not aligned with project schedule or project schedule calculated based on delivery deadline and not effort required	Y	Y	Custom	Custom	IT-IS	Y
20	Management of project delays, revision of project based on delays encountered	Y	Y	Custom	Custom	IT-IS	Y
21	Documentation on planning and estimation lacking or inadequate	N	N	Custom	N/A	N/A	N/A
22	Significant changes to the project, including Scope schedule or goals	Y	Y	Custom	Custom	IT-IS	Y
23	Roles and responsibilities of team members are not clearly defined	Y	N	Custom	N/A	N/A	N/A
24	Project communications lacking or not defined, including planning and resources	Y	N	Custom	N/A	N/A	N/A
25	Project management methodology not properly implemented or not being used at all	N	N	Custom	N/A	N/A	N/A
26	Project charter not created or incomplete	N	N	Custom	N/A	N/A	N/A
27	Key project deliverables are outside the locus of control of the project team	Y	Y	Custom	Custom	IT-IS	Y
28	Commitment and belief of project team members in meeting the project scope within schedule is low	N	N	Custom	N/A	N/A	N/A
29	Key stakeholders are unavailable or only have limited availability for review sessions of project	Y	Y	Custom	Custom	IT-IS	Y
30	Skills, knowledge or experience of resources on project team are lacking	Y	N	Custom	N/A	N/A	N/A
31	Project resources are only part time assigned or become fully assigned to another project which is deemed of higher importance	Y	N	Custom	N/A	N/A	N/A
32	Over scheduling of subject matter experts	Y	N	Custom	N/A	N/A	N/A
33	Timely review and sign off on decisions, deliverables and documentation	Y	Y	Custom	Custom	IT-IS	Y
34	Willingness of users (end users of the system) to be involved in and co-operate with the project	Y	N	Custom	N/A	N/A	N/A
35	Limited user involvement due to capabilities in new system being vastly different from existing systems	Y	N	Custom	N/A	N/A	N/A
36	Support teams and users perceive new system as a threat	Y	N	Custom	N/A	N/A	N/A
37	Motivation and maintaining morale of team members throughout a project	Y	N	Custom	N/A	N/A	N/A
38	Turnover of key project team members through the project lifecycle	Y	N	Custom	N/A	N/A	N/A
39	Implementation of new or latest technology	N	N	Custom	N/A	N/A	N/A
40	Availability and capacity constraints on technical communications infrastructure	Y	Y	Custom	Custom	IT-IS	Y
41	Technical complexity	N	N	Custom	N/A	N/A	N/A
42	Goldplating (unrealistic requirements related to the use of the system)	Y	N	Custom	N/A	N/A	N/A

Respondent 7

		Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA
1	Lack of commitment from top senior management (Schmidt, et al., 2001)	Y	N	NEC	N/A	N/A	N/A	N/A
2	Corporate instability and/or organisational change causing instability in the project	Y	N	NEC	N/A	N/A	N/A	N/A
3	Lack of client ownership or de-prioritisation of the project	Y	N	NEC	N/A	N/A	N/A	N/A
4	Lack of supplier ownership or de-prioritisation of the project	N	Y	NEC	Standard	N/A	N/A	N/A
5	Adversarial relationships and loss of trust between vendor and client	Y	Y	NEC	Custom	IT-IS	Y	N
6	No formal alignment of project with business strategy	Y	N	NEC	N/A	N/A	N/A	N/A
7	Communications breakdown between parties involved	Y	Y	NEC	Standard	Generic	Y	Y
8	Functional Requirements not documented or unrealistic	Y	Y	NEC	Standard	IT-IS	Y	N
9	Performance Requirements not documented or unrealistic	Y	Y	NEC	Standard	Generic	Y	Y
10	Reliability Requirements not documented or unrealistic	Y	Y	NEC	Standard	IT-IS	Y	Y
11	Project Scope not documented or partially documented	Y	N	NEC	N/A	N/A	N/A	N/A
12	Ineffective or poorly trained project managers	Y	Y	NEC	Standard	GENERIC	Y	Y
13	Inadequate or non-functional change control process	Y	Y	NEC	Standard	IT-IS	Y	N
14	Not well defined or lack of defined deliverable and associated deliverable dates	Y	N	NEC	N/A	N/A	N/A	N/A
15	Criteria defining project success inadequate or undefined	Y	N	NEC	N/A	N/A	N/A	N/A
16	No business case for the project	N	N	NEC	N/A	N/A	N/A	N/A
17	No project status tracking or progress reporting	N	Y	NEC	Standard	Generic	Y	N
18	Risk management, analysis and tracking not in place or inadequate	Y	N	NEC	N/A	N/A	N/A	N/A
19	Delivery deadline not aligned with project schedule or project schedule calculated based on delivery deadline and not effort required	Y	N	N/A	N/A	N/A	N/A	N/A
20	Management of project delays, revision of project based on delays encountered	Y	Y	NEC	Custom	IT-IS	Y	Y
21	Documentation on planning and estimation lacking or inadequate	Y	Y	NEC	Standard	Generic	N	N/A
22	Significant changes to the project, including Scope schedule or goals	Y	Y	NEC	Custom	Generic	Y	N
23	Roles and responsibilities of team members are not clearly defined	Y	Y	NEC	Custom	Generic	Y	Y
24	Project communications lacking or not defined, including planning and resources	Y	N	NEC	N/A	N/A	N/A	N/A
25	Project management methodology not properly implemented or not being used at all	Y	Y	NEC	Standard	Generic	Y	N
26	Project charter not created or incomplete	Y	Y	NEC	Standard	GENERIC	Y	Y
27	Key project deliverables are outside the locus of control of the project team	Y	N	NEC	N/A	N/A	N/A	N/A
28	Commitment and belief of project team members in meeting the project scope within schedule is low	Y	N	NEC	N/A	N/A	N/A	N/A
29	Key stakeholders are unavailable or only have limited availability for review sessions of project	Y	Y	NEC	Standard	Generic	N	N
30	Skills, knowledge or experience of resources on project team are lacking	Y	Y	NEC	Standard	Generic	Y	N
31	Project resources are only part time assigned or become fully assigned to another project which is deemed of higher importance	Y	Y	NEC	Standard	Generic	Y	N
32	Over scheduling of subject matter experts	N	N	N/A	N/A	N/A	N/A	N/A
33	Timely review and sign off on decisions, deliverables and documentation	Y	Y	NEC	Standard	Generic	Y	Y
34	Willingness of users (end users of the system) to be involved in and co-operate with the project	Y	N	NEC	N/A	N/A	N/A	N/A
35	Limited user involvement due to capabilities in new system being vastly different from existing systems	Y	N	NEC	N/A	N/A	N/A	N/A
36	Support teams and users perceive new system as a threat	Y	N	NEC	N/A	N/A	N/A	N/A
37	Motivation and maintaining morale of team members throughout a project	Y	N	NEC	N/A	N/A	N/A	N/A
38	Turnover of key project team members through the project lifecycle	Y	Y	NEC	Standard	Generic	Y	Y
39	Implementation of new or latest technology	Y	N	NEC	N/A	N/A	N/A	N/A
40	Availability and capacity constraints on technical communications infrastructure	Y	N	NEC	N/A	N/A	N/A	N/A
41	Technical complexity	Y	N	NEC	N/A	N/A	N/A	N/A

Respondent 8

		Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever invoked to these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA
1	Lack of commitment from top senior management (Schmidt, et al., 2001)	Y	Y	NEC	Custom	Generic	Y	Y
2	Corporate instability and/or organisational change causing instability in the project	Y	N	NEC	Custom	Generic	Y	N
3	Lack of client ownership or de-prioritisation of the project	Y	N	NEC	Custom	Generic	N	N/A
4	Lack of supplier ownership or de-prioritisation of the project	Y	Y	NEC	Standard	GENERIC	Y	Y
5	Adversarial relationships and loss of trust between vendor and client	Y	Y	NEC	Standard	Generic	Y	Y
6	No formal alignment of project with business strategy	N	N	NEC	Standard	Generic	N/A	N/A
7	Communications breakdown between parties involved	Y	N	NEC	Standard	Generic	N/A	N/A
8	Functional Requirements not documented or unrealistic	Y	Y	NEC	Custom	Generic	Y	Y
9	Performance Requirements not documented or unrealistic	Y	N	NEC	Standard	Generic	N	N
10	Reliability Requirements not documented or unrealistic	Y	N	NEC	Standard	GENERIC	N/A	N/A
11	Project Scope not documented or partially documented	Y	N	NEC	Custom	Generic	N/A	N/A
12	Ineffective or poorly trained project managers	Y	N	NEC	Standard	N/A	N/A	N/A
13	Inadequate or non-functional change control process	Y	N	NEC	Standard	N/A	N/A	N/A
14	Not well defined or lack of defined deliverable and associated deliverable dates	Y	N	NEC	Standard	N/A	N/A	N/A
15	Criteria defining project success inadequate or undefined	Y	N	NEC	Standard	N/A	N/A	N/A
16	No business case for the project	Y	N	NEC	Standard	N/A	N/A	N/A
17	No project status tracking or progress reporting	Y	Y	NEC	Standard	Generic	Y	Y
18	Risk management, analysis and tracking not in place or inadequate	Y	N	NEC	Standard	Generic	Y	Y
19	Delivery deadline not aligned with project schedule or project schedule calculated based on delivery deadline and not effort required	Y	Y	NEC	Standard	Generic	Y	Y
20	Management of project delays, revision of project based on delays encountered	Y	Y	NEC	Standard	Generic	Y	Y
21	Documentation on planning and estimation lacking or inadequate	Y	N	NEC	Standard	Generic	N/A	N/A
22	Significant changes to the project, including Scope schedule or goals	Y	Y	NEC	Standard	Generic	Y	Y
23	Roles and responsibilities of team members are not clearly defined	Y	N	NEC	Standard	Generic	N/A	N/A
24	Project communications lacking or not defined, including planning and resources	Y	N	NEC	Standard	Generic	N/A	N/A
25	Project management methodology not properly implemented or not being used at all	Y	N	NEC	Standard	Generic	N/A	N/A
26	Project charter not created or incomplete	Y	N	NEC	Standard	GENERIC	N/A	N/A
27	Key project deliverables are outside the locus of control of the project team	Y	N	NEC	Standard	Generic	N/A	N/A
28	Commitment and belief of project team members in meeting the project scope within schedule is low	Y	N	NEC	Standard	Generic	N/A	N/A
29	Key stakeholders are unavailable or only have limited availability for review sessions of project	Y	N	NEC	Standard	Generic	N/A	N/A
30	Skills, knowledge or experience of resources on project team are lacking	Y	Y	NEC	Standard	Generic	Y	Y
31	Project resources are only part time assigned or become fully assigned to another project which is deemed of higher importance	Y	N	NEC	Standard	Generic	N/A	N/A
32	Over scheduling of subject matter experts	Y	N	NEC	Standard	Generic	N/A	N/A
33	Timely review and sign off on decisions, deliverables and documentation	Y	Y	NEC	Standard	Generic	Y	Y
34	Willingness of users (end users of the system) to be involved in and co-operate with the project	Y	N	NEC	Standard	Generic	N/A	N/A
35	Limited user involvement due to capabilities in new system being vastly different from existing systems	Y	N	NEC	Standard	Generic	N/A	N/A
36	Support teams and users perceive new system as a threat	Y	N	NEC	Standard	Generic	N/A	N/A
37	Motivation and maintaining morale of team members throughout a project	Y	N	NEC	Standard	Generic	N/A	N/A
38	Turnover of key project team members through the project lifecycle	Y	Y	NEC	Standard	Generic	Y	Y
39	Implementation of new or latest technology	Y	Y	NEC	Standard	Generic	Y	Y
40	Availability and capacity constraints on technical communications infrastructure	Y	N	NEC	Standard	Generic	N/A	N/A
41	Technical complexity	Y	N	NEC	Standard	Generic	N/A	N/A

Respondent 9

		Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever invoked to these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA
1	Lack of commitment from top senior management (Schmidt, et al., 2001)	N	N	Custom	Custom	IT-IS	N	N/A
2	Corporate instability and/or organisational change causing instability in the project	Y	N	Custom	Custom	IT-IS	N	N/A
3	Lack of client ownership or de-prioritisation of the project	N	N	Custom	Custom	IT-IS	N	N/A
4	Lack of supplier ownership or de-prioritisation of the project	N	Y	Custom	Custom	IT-IS	N	N/A
5	Adversarial relationships and loss of trust between vendor and client	Y	N	Custom	Custom	IT-IS	N	N/A
6	No formal alignment of project with business strategy	N	N	Custom	Custom	IT-IS	N	N/A
7	Communications breakdown between parties involved	N	Y	Custom	Custom	IT-IS	N	N/A
8	Functional Requirements not documented or unrealistic	Y	N	Custom	Custom	IT-IS	y	y
9	Performance Requirements not documented or unrealistic	Y	Y	Custom	Custom	IT-IS	y	N
10	Reliability Requirements not documented or unrealistic	N	N/A	Custom	Custom	N/A	N/A	N/A
11	Project Scope not documented or partially documented	Y	N	Custom	Custom	IT-IS	N	N/A
12	Ineffective or poorly trained project managers	Y	N	Custom	Custom	N/A	N/A	N/A
13	Inadequate or non-functional change control process	Y	N	Custom	Custom	N/A	N/A	N/A
14	Not well defined or lack of defined deliverable and associated deliverable dates	Y	N	Custom	Custom	N/A	N/A	N/A
15	Criteria defining project success inadequate or undefined	Y	N	Custom	Custom	N/A	N/A	N/A
16	No business case for the project	N	Y	Custom	Custom	N/A	N/A	N/A
17	No project status tracking or progress reporting	Y	Y	Custom	Custom	IT-IS	Y	Y
18	Risk management, analysis and tracking not in place or inadequate	Y	N	Custom	Custom	IT-IS	N/A	N/A
19	Delivery deadline not aligned with project schedule or project schedule calculated based on delivery deadline and not effort required	Y	N	Custom	Custom	IT-IS	N/A	N/A
20	Management of project delays, revision of project based on delays encountered	Y	N	Custom	Custom	IT-IS	N/A	N/A
21	Documentation on planning and estimation lacking or inadequate	Y	N	Custom	Custom	IT-IS	N/A	N/A
22	Significant changes to the project, including Scope schedule or goals	Y	Y	Custom	Custom	IT-IS	Y	Y
23	Roles and responsibilities of team members are not clearly defined	N	Y	Custom	Custom	IT-IS	N	N/A
24	Project communications lacking or not defined, including planning and resources	Y	N	Custom	Custom	IT-IS	N	N/A
25	Project management methodology not properly implemented or not being used at all	Y	N	Custom	Custom	IT-IS	N	N/A
26	Project charter not created or incomplete	Y	N	Custom	Custom	IT-IS	N	N/A
27	Key project deliverables are outside the locus of control of the project team	N	N	Custom	Custom	IT-IS	N	N/A
28	Commitment and belief of project team members in meeting the project scope within schedule is low	Y	N	Custom	Custom	IT-IS	N	N/A
29	Key stakeholders are unavailable or only have limited availability for review sessions of project	Y	N	Custom	Custom	IT-IS	N	N/A
30	Skills, knowledge or experience of resources on project team are lacking	Y	Y	Custom	Custom	IT-IS	Y	Y
31	Project resources are only part time assigned or become fully assigned to another project which is deemed of higher importance	N	N	Custom	Custom	IT-IS	N	N/A
32	Over scheduling of subject matter experts	Y	N	Custom	Custom	IT-IS	N	N/A
33	Timely review and sign off on decisions, deliverables and documentation	Y	Y	Custom	Custom	IT-IS	N	N
34	Willingness of users (end users of the system) to be involved in and co-operate with the project	N	N	Custom	Custom	IT-IS	N	N/A
35	Limited user involvement due to capabilities in new system being vastly different from existing systems	Y	Y	Custom	Custom	IT-IS	Y	Y
36	Support teams and users perceive new system as a threat	Y	Y	Custom	Custom	IT-IS	N	N/A
37	Motivation and maintaining morale of team members throughout a project	Y	N	Custom	Custom	IT-IS	N	N/A
38	Turnover of key project team members through the project lifecycle	N	Y	Custom	Custom	IT-IS	Y	Y
39	Implementation of new or latest technology	Y	N	Custom	Custom	IT-IS	N	N/A
40	Availability and capacity constraints on technical communications infrastructure	N/A	N/A	N/A	N/A	N/A	N/A	N/A
41	Technical complexity	Y	N/A	N/A	N/A	N/A	N/A	N/A

Respondent 10

		Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA
1	Lack of commitment from top senior management (Schmidt, et al., 2001)	Y	N	Custom	Custom	IT-IS	N	N
2	Corporate instability and/or organisational change causing instability in the project	N	N/A	Custom	Custom	IT-IS	N	N/A
3	Lack of client ownership or de-prioritisation of the project	Y	N	Custom	Custom	IT-IS	N	N/A
4	Lack of supplier ownership or de-prioritisation of the project	Y	N	Custom	Custom	IT-IS	N	N/A
5	Adversarial relationships and loss of trust between vendor and client	Y	N	Custom	Custom	IT-IS	N	N/A
6	No formal alignment of project with business strategy	N	N/A	N/A	N/A	N/A	N	N/A
7	Communications breakdown between parties involved	Y	Y	Custom	Custom	IT-IS	N	N/A
8	Functional Requirements not documented or unrealistic	Y	Y	Custom	Custom	IT-IS	Y	Y
9	Performance Requirements not documented or unrealistic	Y	Y	Custom	Custom	IT-IS	N	N/A
10	Reliability Requirements not documented or unrealistic	N	N/A	N/A	N/A	N/A	N	N/A
11	Project Scope not documented or partially documented	Y	Y	Custom	Custom	IT-IS	Y	Y
12	Ineffective or poorly trained project managers	N	N/A	N/A	N/A	N/A	N	N/A
13	Inadequate or non-functional change control process	N	Y	Custom	Custom	IT-IS	N	N/A
14	Not well defined or lack of defined deliverable and associated deliverable dates	N	Y	Custom	Custom	IT-IS	N	N/A
15	Criteria defining project success inadequate or undefined	Y	N	Custom	Custom	IT-IS	N	N/A
16	No business case for the project	N	N/A	N/A	N/A	N/A	N	N/A
17	No project status tracking or progress reporting	N	Y	Custom	Custom	IT-IS	N	N/A
18	Risk management, analysis and tracking not in place or inadequate	N	Y	Custom	Custom	IT-IS	Y	Y
19	Delivery deadline not aligned with project schedule or project schedule calculated based on delivery deadline and not effort required	Y	N	Custom	Custom	IT-IS	N	N/A
20	Management of project delays, revision of project based on delays encountered	Y	Y	Custom	Custom	IT-IS	Y	Y
21	Documentation on planning and estimation lacking or inadequate	Y	N	Custom	Custom	IT-IS	N	N/A
22	Significant changes to the project, including Scope schedule or goals	Y	Y	Custom	Custom	IT-IS	Y	Y
23	Roles and responsibilities of team members are not clearly defined	Y	Y	Custom	Custom	IT-IS	Y	Y
24	Project communications lacking or not defined, including planning and resources	N	Y	Custom	Custom	IT-IS	N	N/A
25	Project management methodology not properly implemented or not being used at all	Y	Y	Custom	Custom	IT-IS	N	N/A
26	Project charter not created or incomplete	Y	Y	Custom	Custom	IT-IS	N	N
27	Key project deliverables are outside the locus of control of the project team	N	N/A	N/A	N/A	N/A	N	N/A
28	Commitment and belief of project team members in meeting the project scope within schedule is low	Y	N	Custom	Custom	IT-IS	N	N/A
29	Key stakeholders are unavailable or only have limited availability for review sessions of project	Y	Y	Custom	Custom	IT-IS	N	N
30	Skills, knowledge or experience of resources on project team are lacking	Y	Y	Custom	Custom	IT-IS	N	N
31	Project resources are only part time assigned or become fully assigned to another project which is deemed of higher importance	Y	Y	Custom	Custom	IT-IS	N	N
32	Over scheduling of subject matter experts	Y	N	Custom	Custom	IT-IS	N	N
33	Timely review and sign off on decisions, deliverables and documentation	Y	Y	Custom	Custom	IT-IS	Y	N
34	Willingness of users (end users of the system) to be involved in and co-operate with the project	Y	Y	Custom	Custom	IT-IS	Y	N
35	Limited user involvement due to capabilities in new system being vastly different from existing systems	Y	Y	Custom	Custom	IT-IS	Y	Y
36	Support teams and users perceive new system as a threat	Y	Y	Custom	Custom	IT-IS	N	N/A
37	Motivation and maintaining morale of team members throughout a project	Y	N	Custom	Custom	IT-IS	N	N
38	Turnover of key project team members through the project lifecycle	Y	Y	Custom	Custom	IT-IS	N	N
39	Implementation of new or latest technology	Y	N	Custom	Custom	IT-IS	N	N
40	Availability and capacity constraints on technical communications infrastructure	Y	Y	Custom	Custom	IT-IS	Y	N
41	Technical complexity	Y	N	Custom	Custom	IT-IS	N	N/A

Respondent 11

		Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA
		11						
1	Lack of commitment from top senior management (Schmidt, et al., 2001)	Y	N	NEC	Custom	IT-IS	Y	N
2	Corporate instability and/or organisational change causing instability in the project	Y	N	NEC	N/A	N/A	N	N/A
3	Lack of client ownership or de-prioritisation of the project	Y	N	NEC	Standard	N/A	N	N/A
4	Lack of supplier ownership or de-prioritisation of the project	Y	N	NEC	Standard	N/A	N	N/A
5	Adversarial relationships and loss of trust between vendor and client	Y	N	NEC	N/A	N/A	N	N/A
6	No formal alignment of project with business strategy	Y	N	NEC	N/A	N/A	N	N/A
7	Communications breakdown between parties involved	Y	N	NEC	N/A	N/A	N	N/A
8	Functional Requirements not documented or unrealistic	Y	Y	NEC	Custom	IT-IS	N	N/A
9	Performance Requirements not documented or unrealistic	Y	Y	NEC	Custom	IT-IS	N	N/A
10	Reliability Requirements not documented or unrealistic	Y	N	NEC	Custom	IT-IS	N	N/A
11	Project Scope not documented or partially documented	Y	N	NEC	Custom	IT-IS	N	N/A
12	Ineffective or poorly trained project managers	Y	N	NEC	N/A	N/A	N	N/A
13	Inadequate or non-functional change control process	Y	N	NEC	N/A	N/A	N	N/A
14	Not well defined or lack of defined deliverable and associated deliverable dates	Y	Y	NEC	Custom	IT-IS	N	N/A
15	Criteria defining project success inadequate or undefined	Y	N	NEC	N/A	N/A	N	N/A
16	No business case for the project	Y	N	NEC	N/A	N/A	N	N/A
17	No project status tracking or progress reporting	Y	N	NEC	N/A	N/A	N	N/A
18	Risk management, analysis and tracking not in place or inadequate	Y	N	NEC	N/A	N/A	N	N/A
19	Delivery deadline not aligned with project schedule or project schedule calculated based on delivery deadline and not effort required	Y	Y	NEC	Custom	IT-IS	N	N/A
20	Management of project delays, revision of project based on delays encountered	Y	N	NEC	N/A	N/A	N	N/A
21	Documentation on planning and estimation lacking or inadequate	Y	N	NEC	N/A	N/A	N	N/A
22	Significant changes to the project, including Scope schedule or goals	Y	N	NEC	N/A	N/A	N	N/A
23	Roles and responsibilities of team members are not clearly defined	Y	N	NEC	N/A	N/A	N	N/A
24	Project communications lacking or not defined, including planning and resources	Y	N	NEC	N/A	N/A	N	N/A
25	Project management methodology not properly implemented or not being used at all	Y	N	NEC	N/A	N/A	N	N/A
26	Project charter not created or incomplete	Y	N	NEC	N/A	N/A	N	N/A
27	Key project deliverables are outside the locus of control of the project team	Y	N	NEC	N/A	N/A	N	N/A
28	Commitment and belief of project team members in meeting the project scope within schedule is low	Y	N	NEC	N/A	N/A	N	N/A
29	Key stakeholders are unavailable or only have limited availability for review sessions of project	Y	N	NEC	N/A	N/A	N	N/A
30	Skills, knowledge or experience of resources on project team are lacking	Y	N	NEC	N/A	N/A	N	N/A
31	Project resources are only part time assigned or become fully assigned to another project which is deemed of higher importance	N	N	NEC	N/A	N/A	N	N/A
32	Over scheduling of subject matter experts	Y	N	NEC	N/A	N/A	N	N/A
33	Timely review and sign off on decisions, deliverables and documentation	Y	N	NEC	N/A	N/A	N	N/A
34	Willingness of users (end users of the system) to be involved in and co-operate with the project	Y	N	NEC	N/A	N/A	N	N/A
35	Limited user involvement due to capabilities in new system being vastly different from existing systems	Y	Y	NEC	Custom	IT-IS	N	N/A
36	Support teams and users perceive new system as a threat	Y	N	NEC	N/A	N/A	N	N/A
37	Motivation and maintaining morale of team members throughout a project	Y	N	NEC	N/A	N/A	N	N/A
38	Turnover of key project team members through the project lifecycle	Y	N	NEC	N/A	N/A	N	N/A
39	Implementation of new or latest technology	Y	N	NEC	N/A	N/A	N	N/A
40	Availability and capacity constraints on technical communications infrastructure	Y	N	NEC	N/A	N/A	N	N/A
41	Technical complexity	Y	N	NEC	N/A	N/A	N	N/A

Respondent 12

		Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA
1	Lack of commitment from top senior management (Schmidt, et al., 2001)	Y	N	NEC	Standard	Generic	N/A	N/A
2	Corporate instability and/or organisational change causing instability in the project	Y	N	NEC	Standard	N/A	N/A	N/A
3	Lack of client ownership or de-prioritisation of the project	Y	N	NEC	Standard	N/A	N/A	N/A
4	Lack of supplier ownership or de-prioritisation of the project	Y	N	NEC	Standard	GENERIC	N/A	N/A
5	Adversarial relationships and loss of trust between vendor and client	Y	N	NEC	Standard	N/A	N/A	N/A
6	No formal alignment of project with business strategy	Y	N	NEC	Standard	N/A	N/A	N/A
7	Communications breakdown between parties involved	Y	N	NEC	Standard	N/A	N/A	N/A
8	Functional Requirements not documented or unrealistic	Y	N	NEC	Standard	N/A	N/A	N/A
9	Performance Requirements not documented or unrealistic	Y	N	NEC	Standard	N/A	N/A	N/A
10	Reliability Requirements not documented or unrealistic	Y	N	NEC	Standard	N/A	N/A	N/A
11	Project Scope not documented or partially documented	Y	Y	NEC	Standard	N/A	y	y
12	Ineffective or poorly trained project managers	Y	Y	NEC	Standard	N/A	y	y
13	Inadequate or non-functional change control process	Y	N	NEC	Standard	Generic	N/A	N/A
14	Not well defined or lack of defined deliverable and associated deliverable dates	Y	Y	NEC	Standard	Generic	y	y
15	Criteria defining project success inadequate or undefined	Y	N	NEC	Standard	Generic	N/A	N/A
16	No business case for the project	Y	N	NEC	Standard	Generic	N/A	N/A
17	No project status tracking or progress reporting	Y	N	NEC	Standard	Generic	N/A	N/A
18	Risk management, analysis and tracking not in place or inadequate	Y	N	NEC	Standard	Generic	N/A	N/A
19	Delivery deadline not aligned with project schedule or project schedule calculated based on delivery deadline and not effort required	Y	Y	NEC	Standard	Generic	y	y
20	Management of project delays, revision of project based on delays encountered	Y	n	NEC	Standard	Generic	N/A	N/A
21	Documentation on planning and estimation lacking or inadequate	Y	n	NEC	Standard	N/A	N/A	N/A
22	Significant changes to the project, including Scope schedule or goals	Y	N	NEC	Standard	Generic	N/A	N/A
23	Roles and responsibilities of team members are not clearly defined	Y	N	NEC	Standard	Generic	N/A	N/A
24	Project communications lacking or not defined, including planning and resources	Y	N	NEC	Standard	Generic	N/A	N/A
25	Project management methodology not properly implemented or not being used at all	Y	N	NEC	Standard	Generic	N/A	N/A
26	Project charter not created or incomplete	Y	N	NEC	Standard	Generic	N/A	N/A
27	Key project deliverables are outside the locus of control of the project team	Y	N	NEC	Standard	Generic	N/A	N/A
28	Commitment and belief of project team members in meeting the project scope within schedule is low	Y	N	NEC	Standard	N/A	N/A	N/A
29	Key stakeholders are unavailable or only have limited availability for review sessions of project	Y	N	NEC	Standard	Generic	N/A	N/A
30	Skills, knowledge or experience of resources on project team are lacking	Y	N	NEC	Standard	Generic	N/A	N/A
31	Project resources are only part time assigned or become fully assigned to another project which is deemed of higher importance	Y	N	NEC	Standard	Generic	N/A	N/A
32	Over scheduling of subject matter experts	Y	N	NEC	Standard	Generic	N/A	N/A
33	Timely review and sign off on decisions, deliverables and documentation	Y	N	NEC	Standard	Generic	N/A	N/A
34	Willingness of users (end users of the system) to be involved in and co-operate with the project	Y	N	NEC	Standard	Generic	N/A	N/A
35	Limited user involvement due to capabilities in new system being vastly different from existing systems	Y	N	NEC	Standard	Generic	N/A	N/A
36	Support teams and users perceive new system as a threat	Y	N	NEC	Standard	Generic	N/A	N/A
37	Motivation and maintaining morale of team members throughout a project	y	n	NEC	Standard	n/a	N/A	N/A
38	Turnover of key project team members through the project lifecycle	Y	N	NEC	Standard	Generic	N/A	N/A
39	Implementation of new or latest technology	Y	N	NEC	Standard	Generic	N/A	N/A
40	Availability and capacity constraints on technical communications infrastructure	Y	N	NEC	Standard	Generic	N/A	N/A
41	Technical complexity	Y	N	NEC	Standard	Generic	N/A	N/A

Respondent 13

		Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA
1	Lack of commitment from top senior management (Schmidt, et al., 2001)	Y	N	N/A	N/A	N/A	N/A	N/A
2	Corporate instability and/or organisational change causing instability in the project	Y	N	N/A	N/A	N/A	N/A	N/A
3	Lack of client ownership or de-prioritisation of the project	Y	N	N/A	N/A	N/A	N/A	N/A
4	Lack of supplier ownership or de-prioritisation of the project	N	N	N/A	N/A	N/A	N/A	N/A
5	Adversarial relationships and loss of trust between vendor and client	Y	Y	NEC	Standard	Generic	N	N/A
6	No formal alignment of project with business strategy	Y	N	N/A	N/A	N/A	N/A	N/A
7	Communications breakdown between parties involved	Y	Y	NEC	Standard	Generic	N	N/A
8	Functional Requirements not documented or unrealistic	Y	Y	NEC	Standard	Generic	N	N/A
9	Performance Requirements not documented or unrealistic	Y	Y	NEC	Standard	Generic	N	N/A
10	Reliability Requirements not documented or unrealistic	Y	Y	NEC	Standard	Generic	N	N/A
11	Project Scope not documented or partially documented	N	N	NEC	Standard	Generic	N	N/A
12	Ineffective or poorly trained project managers	Y	N	N/A	N/A	N/A	N/A	N/A
13	Inadequate or non-functional change control process	Y	Y	NEC	Standard	Generic	N	N/A
14	Not well defined or lack of defined deliverable and associated deliverable dates	N	Y	NEC	Standard	Generic	N	N/A
15	Criteria defining project success inadequate or undefined	Y	N	NEC	Standard	Generic	N	N/A
16	No business case for the project	N	N	N/A	N/A	N/A	N/A	N/A
17	No project status tracking or progress reporting	N	Y	NEC	Standard	Generic	N	N/A
18	Risk management, analysis and tracking not in place or inadequate	Y	Y	NEC	Standard	Generic	N	N/A
19	Delivery deadline not aligned with project schedule or project schedule calculated based on delivery deadline and not effort required	Y	Y	NEC	Standard	Generic	N	N/A
20	Management of project delays, revision of project based on delays encountered	Y	Y	NEC	Standard	Generic	N	N/A
21	Documentation on planning and estimation lacking or inadequate	Y	N	N/A	N/A	N/A	N/A	N/A
22	Significant changes to the project, including Scope schedule or goals	Y	Y	NEC	Standard	Generic	N	N/A
23	Roles and responsibilities of team members are not clearly defined	Y	Y	NEC	Standard	Generic	N	N/A
24	Project communications lacking or not defined, including planning and resources	Y	Y	NEC	Standard	Generic	N	N/A
25	Project management methodology not properly implemented or not being used at all	N	Y	NEC	Standard	Generic	N	N/A
26	Project charter not created or incomplete	N	N	N/A	N/A	N/A	N/A	N/A
27	Key project deliverables are outside the locus of control of the project team	Y	Y	NEC	Standard	Generic	N	N/A
28	Commitment and belief of project team members in meeting the project scope within schedule is low	Y	N	N/A	N/A	N/A	N/A	N/A
29	Key stakeholders are unavailable or only have limited availability for review sessions of project	Y	Y	NEC	Standard	Generic	N	N/A
30	Skills, knowledge or experience of resources on project team are lacking	Y	N	N/A	N/A	N/A	N/A	N/A
31	Project resources are only part time assigned or become fully assigned to another project which is deemed of higher importance	Y	N	N/A	N/A	N/A	N/A	N/A
32	Over scheduling of subject matter experts	Y	N	N/A	N/A	N/A	N/A	N/A
33	Timely review and sign off on decisions, deliverables and documentation	Y	Y	NEC	Standard	Generic	N	N/A
34	Willingness of users (end users of the system) to be involved in and co-operate with the project	Y	N	N/A	N/A	N/A	N/A	N/A
35	Limited user involvement due to capabilities in new system being vastly different from existing systems	Y	N	N/A	N/A	N/A	N/A	N/A
36	Support teams and users perceive new system as a threat	Y	N	N/A	N/A	N/A	N/A	N/A
37	Motivation and maintaining morale of team members throughout a project	Y	N	N/A	N/A	N/A	N/A	N/A
38	Turnover of key project team members through the project lifecycle	Y	Y	NEC	Standard	Generic	N	N/A
39	Implementation of new or latest technology	Y	N	N/A	N/A	N/A	N/A	N/A
40	Availability and capacity constraints on technical communications infrastructure	Y	N	N/A	N/A	N/A	N/A	N/A
41	Technical complexity	Y	N	N/A	N/A	N/A	N/A	N/A

Respondent 14

		Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA
	14							
1	Lack of commitment from top senior management (Schmidt, et al., 2001)	Y	N	Custom	Standard	N/A	N/A	N/A
2	Corporate instability and/or organisational change causing instability in the project	Y	N	Custom	Standard	N/A	N/A	N/A
3	Lack of client ownership or de-prioritisation of the project	Y	N	Custom	Standard	Generic	N/A	N/A
4	Lack of supplier ownership or de-prioritisation of the project	Y	N	Custom	Standard	Generic	N/A	N/A
5	Adversarial relationships and loss of trust between vendor and client	Y	N	Custom	Standard	Generic	N	N
6	No formal alignment of project with business strategy	Y	N	Custom	Standard	Generic	N	N
7	Communications breakdown between parties involved	Y	Y	Custom	Standard	Generic	N/A	N
8	Functional Requirements not documented or unrealistic	Y	N	Custom	Standard	Generic	N/A	N
9	Performance Requirements not documented or unrealistic	Y	N	Custom	Standard	Generic	Y	N
10	Reliability Requirements not documented or unrealistic	Y	N	Custom	Standard	Generic	N	N
11	Project Scope not documented or partially documented	Y	N	Custom	Standard	Generic	N	N
12	Ineffective or poorly trained project managers	Y	N	Custom	Standard	Generic	N	N
13	Inadequate or non-functional change control process	Y	N	Custom	Standard	Generic	N/A	N
14	Not well defined or lack of defined deliverable and associated deliverable dates	Y	N	Custom	Standard	Generic	N	N/A
15	Criteria defining project success inadequate or undefined	Y	N	Custom	Standard	Generic	N	N
16	No business case for the project	Y	N	Custom	Standard	Generic	N	N/A
17	No project status tracking or progress reporting	Y	N	Custom	Standard	Generic	Y	Y
18	Risk management, analysis and tracking not in place or inadequate	Y	N	Custom	Standard	Generic	Y	Y
19	Delivery deadline not aligned with project schedule or project schedule calculated based on delivery deadline and not effort required	Y	N	Custom	Standard	Generic	Y	N
20	Management of project delays, revision of project based on delays encountered	Y	N	Custom	Standard	Generic	Y	Y
21	Documentation on planning and estimation lacking or inadequate	Y	N	Custom	Standard	Generic	Y	N
22	Significant changes to the project, including Scope schedule or goals	Y	N	Custom	Standard	Generic	Y	Y
23	Roles and responsibilities of team members are not clearly defined	Y	N	Custom	Standard	Generic	Y	N
24	Project communications lacking or not defined, including planning and resources	Y	N	Custom	Standard	Generic	Y	N
25	Project management methodology not properly implemented or not being used at all	Y	N	Custom	Standard	Generic	Y	Y
26	Project charter not created or incomplete	Y	N	Custom	Standard	Generic	Y	N
27	Key project deliverables are outside the locus of control of the project team	Y	N	Custom	Standard	Generic	Y	N
28	Commitment and belief of project team members in meeting the project scope within schedule is low	Y	N	Custom	Standard	Generic	Y	N
29	Key stakeholders are unavailable or only have limited availability for review sessions of project	Y	N	Custom	Standard	Generic	Y	N
30	Skills, knowledge or experience of resources on project team are lacking	Y	N	Custom	Standard	Generic	N/A	N/A
31	Project resources are only part time assigned or become fully assigned to another project which is deemed of higher importance	Y	N	Custom	Standard	Generic	Y	N
32	Over scheduling of subject matter experts	Y	N	Custom	Standard	Generic	Y	N
33	Timely review and sign off on decisions, deliverables and documentation	Y	N	Custom	Standard	Generic	Y	N
34	Willingness of users (end users of the system) to be involved in and co-operate with the project	Y	N	Custom	Standard	Generic	N	N/A
35	Limited user involvement due to capabilities in new system being vastly different from existing systems	Y	N	Custom	Standard	Generic	Y	Y
36	Support teams and users perceive new system as a threat	Y	N	Custom	Standard	Generic	Y	N
37	Motivation and maintaining morale of team members throughout a project	Y	N	Custom	Standard	Generic	N	N
38	Turnover of key project team members through the project lifecycle	Y	N	Custom	Standard	N/A	Y	N
39	Implementation of new or latest technology	Y	Y	Custom	Standard	Generic	Y	N
40	Availability and capacity constraints on technical communications infrastructure	Y	N	Custom	Standard	N/A	Y	N
41	Technical complexity	Y	N	Custom	Standard	Generic	Y	N

Respondent 15

		Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA
15								
1	Lack of commitment from top senior management (Schmidt, et al., 2001)	Y	N	NEC	Custom	Generic	N/A	N/A
2	Corporate instability and/or organisational change causing instability in the project	Y	N	NEC	Custom	Generic	N/A	N/A
3	Lack of client ownership or de-prioritisation of the project	Y	N	NEC	Custom	Generic	N/A	N/A
4	Lack of supplier ownership or de-prioritisation of the project	Y	Y	NEC	Custom	Generic	Y	N
5	Adversarial relationships and loss of trust between vendor and client	Y	Y	NEC	Custom	Generic	Y	N
6	No formal alignment of project with business strategy	N	N	NEC	Custom	Generic	N/A	N/A
7	Communications breakdown between parties involved	Y	Y	NEC	Custom	Generic	Y	N
8	Functional Requirements not documented or unrealistic	N	N	NEC	Custom	Generic	N/A	N/A
9	Performance Requirements not documented or unrealistic	Y	Y	NEC	Custom	Generic	Y	N
10	Reliability Requirements not documented or unrealistic	Y	Y	NEC	Custom	Generic	Y	N
11	Project Scope not documented or partially documented	Y	N	NEC	Custom	Generic	N/A	N/A
12	Ineffective or poorly trained project managers	Y	N	NEC	Custom	Generic	N/A	N/A
13	Inadequate or non-functional change control process	Y	N	NEC	Custom	Generic	N/A	N/A
14	Not well defined or lack of defined deliverable and associated deliverable dates	Y	Y	NEC	Custom	Generic	Y	Y
15	Criteria defining project success inadequate or undefined	Y	N	NEC	Custom	Generic	N/A	N/A
16	No business case for the project	N	N	NEC	Custom	Generic	N/A	N/A
17	No project status tracking or progress reporting	N	N	NEC	Custom	Generic	N/A	N/A
18	Risk management, analysis and tracking not in place or inadequate	Y	N	NEC	Custom	Generic	N/A	N/A
19	Delivery deadline not aligned with project schedule or project schedule calculated based on delivery deadline and not effort required	Y	N	NEC	Custom	Generic	N/A	N/A
20	Management of project delays, revision of project based on delays encountered	Y	N	NEC	Custom	Generic	N/A	N/A
21	Documentation on planning and estimation lacking or inadequate	Y	N	NEC	Custom	Generic	N/A	N/A
22	Significant changes to the project, including Scope schedule or goals	N	N	NEC	Custom	Generic	N/A	N/A
23	Roles and responsibilities of team members are not clearly defined	Y	N	NEC	Custom	Generic	N/A	N/A
24	Project communications lacking or not defined, including planning and resources	Y	N	NEC	Custom	Generic	N/A	N/A
25	Project management methodology not properly implemented or not being used at all	Y	N	NEC	Custom	Generic	N/A	N/A
26	Project charter not created or incomplete	Y	N	NEC	Custom	Generic	N/A	N/A
27	Key project deliverables are outside the locus of control of the project team	n	N	NEC	Custom	Generic	N/A	N/A
28	Commitment and belief of project team members in meeting the project scope within schedule is low	Y	N	NEC	Custom	Generic	N/A	N/A
29	Key stakeholders are unavailable or only have limited availability for review sessions of project	Y	N	NEC	Custom	Generic	N/A	N/A
30	Skills, knowledge or experience of resources on project team are lacking	Y	N	NEC	Custom	Generic	N	N
31	Project resources are only part time assigned or become fully assigned to another project which is deemed of higher importance	Y	N	NEC	Custom	Generic	Y	Y
32	Over scheduling of subject matter experts	Y	N	NEC	Custom	Generic	N	N
33	Timely review and sign off on decisions, deliverables and documentation	N	N	NEC	Custom	Generic	N/A	N/A
34	Willingness of users (end users of the system) to be involved in and co-operate with the project	Y	N	NEC	Custom	Generic	N/A	N/A
35	Limited user involvement due to capabilities in new system being vastly different from existing systems	Y	N	NEC	Custom	Generic	N/A	N/A
36	Support teams and users perceive new system as a threat	N	N	NEC	Custom	Generic	N/A	N/A
37	Motivation and maintaining morale of team members throughout a project	Y	N	NEC	Custom	Generic	N/A	N/A
38	Turnover of key project team members through the project lifecycle	Y	N	NEC	Custom	Generic	N/A	N/A
39	Implementation of new or latest technology	Y	N	NEC	Custom	Generic	N/A	N/A
40	Availability and capacity constraints on technical communications infrastructure	N	N	NEC	Custom	Generic	N/A	N/A
41	Technical complexity	N	N	NEC	Custom	Generic	N/A	N/A

Respondent 16

		Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA
16	Lack of commitment from top senior management (Schmidt, et al., 2001)	N	N	NEC	N/A	Generic	N/A	N/A
2	Corporate instability and/or organisational change causing instability in the project	N	N	NEC	N/A	Generic	N/A	N/A
3	Lack of client ownership or de-prioritisation of the project	N	N	NEC	N/A	Generic	N/A	N/A
4	Lack of supplier ownership or de-prioritisation of the project	N	N	NEC	N/A	Generic	N/A	N/A
5	Adversarial relationships and loss of trust between vendor and client	N	N	NEC	N/A	Generic	N/A	N/A
6	No formal alignment of project with business strategy	N	N	NEC	N/A	Generic	N/A	N/A
7	Communications breakdown between parties involved	N	N	NEC	N/A	Generic	N/A	N/A
8	Functional Requirements not documented or unrealistic	N	N	NEC	N/A	Generic	N/A	N/A
9	Performance Requirements not documented or unrealistic	Y	Y	NEC	Custom	IT-IS	Y	Y
10	Reliability Requirements not documented or unrealistic	N	Y	NEC	Custom	IT-IS	N	N/A
11	Project Scope not documented or partially documented	N	Y	NEC	Custom	IT-IS	Y	Y
12	Ineffective or poorly trained project managers	N	Y	NEC	Custom	IT-IS	N	N/A
13	Inadequate or non-functional change control process	N	N	NEC	N/A	N/A	N/A	N/A
14	Not well defined or lack of defined deliverable and associated deliverable dates	N	N	NEC	N/A	N/A	N/A	N/A
15	Criteria defining project success inadequate or undefined	N	Y	NEC	Custom	IT-IS	N	N
16	No business case for the project	N	N/A	NEC	N/A	N/A	N/A	N/A
17	No project status tracking or progress reporting	N	Y	NEC	Custom	IT-IS	N	N/A
18	Risk management, analysis and tracking not in place or inadequate	N	Y	NEC	Custom	IT-IS	N	N/A
19	Delivery deadline not aligned with project schedule or project schedule calculated based on delivery deadline and not effort required	N	N/A	NEC	N/A	N/A	N/A	N/A
20	Management of project delays, revision of project based on delays encountered	Y	Y	NEC	Custom	IT-IS	Y	Y
21	Documentation on planning and estimation lacking or inadequate	N	Y	NEC	Custom	IT-IS	N	N/A
22	Significant changes to the project, including Scope schedule or goals	Y	Y	NEC	Custom	IT-IS	Y	Y
23	Roles and responsibilities of team members are not clearly defined	N	Y	NEC	Custom	IT-IS	N	N/A
24	Project communications lacking or not defined, including planning and resources	N	Y	NEC	Custom	IT-IS	N	N/A
25	Project management methodology not properly implemented or not being used at all	N	Y	NEC	Standard	IT-IS	N	N/A
26	Project charter not created or incomplete	N	N	NEC	N/A	N/A	N/A	N/A
27	Key project deliverables are outside the locus of control of the project team	N	Y	NEC	Custom	IT-IS	N	N/A
28	Commitment and belief of project team members in meeting the project scope within schedule is low	Y	N	NEC	N/A	N/A	N/A	N/A
29	Key stakeholders are unavailable or only have limited availability for review sessions of project	N	Y	NEC	Custom	IT-IS	N	N/A
30	Skills, knowledge or experience of resources on project team are lacking	N	Y	NEC	Custom	IT-IS	N	N/A
31	Project resources are only part time assigned or become fully assigned to another project which is deemed of higher importance	N	Y	NEC	Custom	IT-IS	N	N/A
32	Over scheduling of subject matter experts	Y	N	NEC	N/A	N/A	N/A	N/A
33	Timely review and sign off on decisions, deliverables and documentation	Y	Y	NEC	Custom	IT-IS	Y	Y
34	Willingness of users (end users of the system) to be involved in and co-operate with the project	N	N	NEC	N/A	N/A	N/A	N/A
35	Limited user involvement due to capabilities in new system being vastly different from existing systems	N	N	NEC	N/A	N/A	N/A	N/A
36	Support teams and users perceive new system as a threat	Y	N	NEC	N/A	N/A	N/A	N/A
37	Motivation and maintaining morale of team members throughout a project	Y	N	NEC	N/A	N/A	N/A	N/A
38	Turnover of key project team members through the project lifecycle	N	N	NEC	N/A	N/A	N/A	N/A
39	Implementation of new or latest technology	Y	N	NEC	N/A	N/A	N/A	N/A
40	Availability and capacity constraints on technical communications infrastructure	N	N	NEC	N/A	N/A	N/A	N/A
41	Technical complexity	Y	N	NEC	N/A	N/A	N/A	N/A

Respondent 17

		Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT-IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA
1	Lack of commitment from top senior management (Schmidt, et al., 2001)	Y	N	NEC	Custom	IT-IS	N	N/A
2	Corporate instability and/or organisational change causing instability in the project	Y	Y	NEC	Custom	IT-IS	N	N/A
3	Lack of client ownership or de-prioritisation of the project	Y	N	NEC	Custom	IT-IS	N	N/A
4	Lack of supplier ownership or de-prioritisation of the project	Y	N	NEC	CUSTOM	IT-IS	N	N/A
5	Adversarial relationships and loss of trust between vendor and client	Y	N	NEC	Custom	IT-IS	N/A	N/A
6	No formal alignment of project with business strategy	Y	N	NEC	Custom	IT-IS	N	N/A
7	Communications breakdown between parties involved	Y	Y	NEC	Custom	IT-IS	N	N/A
8	Functional Requirements not documented or unrealistic	Y	N	NEC	CUSTOM	IT-IS	N	N/A
9	Performance Requirements not documented or unrealistic	Y	N	NEC	CUSTOM	IT-IS	N	N/A
10	Reliability Requirements not documented or unrealistic	Y	Y	NEC	Custom	IT-IS	N	N/A
11	Project Scope not documented or partially documented	Y	Y	NEC	Custom	IT-IS	N	N/A
12	Ineffective or poorly trained project managers	N	Y	NEC	Custom	IT-IS	N	N/A
13	Inadequate or non-functional change control process	Y	N	NEC	Custom	IT-IS	N	N/A
14	Not well defined or lack of defined deliverable and associated deliverable dates	Y	Y	NEC	Custom	IT-IS	N	N/A
15	Criteria defining project success inadequate or undefined	Y	N	NEC	Custom	IT-IS	N	N/A
16	No business case for the project	Y	N	NEC	Custom	IT-IS	N	N/A
17	No project status tracking or progress reporting	N	Y	NEC	Custom	IT-IS	N	N/A
18	Risk management, analysis and tracking not in place or inadequate	Y	Y	NEC	Custom	IT-IS	N	N/A
19	Delivery deadline not aligned with project schedule or project schedule calculated based on delivery deadline and not effort required	Y	N	NEC	Custom	IT-IS	N	N/A
20	Management of project delays, revision of project based on delays encountered	Y	Y	NEC	Custom	IT-IS	N	N/A
21	Documentation on planning and estimation lacking or inadequate	Y	Y	NEC	Custom	IT-IS	N	N/A
22	Significant changes to the project, including Scope schedule or goals	Y	Y	NEC	Custom	IT-IS	N	N/A
23	Roles and responsibilities of team members are not clearly defined	Y	N	NEC	Custom	IT-IS	N	N/A
24	Project communications lacking or not defined, including planning and resources	Y	Y	NEC	Custom	IT-IS	N	N/A
25	Project management methodology not properly implemented or not being used at all	Y	N	NEC	Custom	IT-IS	N	N/A
26	Project charter not created or incomplete	Y	N	NEC	Custom	IT-IS	N	N/A
27	Key project deliverables are outside the locus of control of the project team	Y	N	NEC	Custom	IT-IS	N	N/A
28	Commitment and belief of project team members in meeting the project scope within schedule is low	Y	N	NEC	Custom	IT-IS	N	N/A
29	Key stakeholders are unavailable or only have limited availability for review sessions of project	Y	N	NEC	Custom	IT-IS	N	N/A
30	Skills, knowledge or experience of resources on project team are lacking	Y	Y	NEC	Custom	IT-IS	N	N/A
31	Project resources are only part time assigned or become fully assigned to another project which is deemed of higher importance	Y	Y	NEC	Custom	IT-IS	N	N/A
32	Over scheduling of subject matter experts	Y	N	NEC	Custom	IT-IS	N	N/A
33	Timely review and sign off on decisions, deliverables and documentation	Y	N	NEC	Custom	IT-IS	N	N/A
34	Willingness of users (end users of the system) to be involved in and co-operate with the project	Y	N	NEC	Custom	IT-IS	N	N/A
35	Limited user involvement due to capabilities in new system being vastly different from existing systems	Y	N	NEC	Custom	IT-IS	N	N/A
36	Support teams and users perceive new system as a threat	Y	N	NEC	Custom	IT-IS	N	N/A
37	Motivation and maintaining morale of team members throughout a project	Y	Y	NEC	Custom	IT-IS	N	N/A
38	Turnover of key project team members through the project lifecycle	Y	Y	NEC	Custom	IT-IS	N	N/A
39	Implementation of new or latest technology	Y	Y	NEC	Custom	IT-IS	N	N/A
40	Availability and capacity constraints on technical communications infrastructure	Y	Y	NEC	Custom	IT-IS	N	N/A
41	Technical complexity	Y	Y	NEC	Custom	IT-IS	N	N/A

Respondent 18

		Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT-IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA
1	Lack of commitment from top senior management (Schmidt, et al., 2001)	N	N	N/A	N/A	N/A	N	N/A
2	Corporate instability and/or organisational change causing instability in the project	N	N	N/A	N/A	N/A	N/A	N/A
3	Lack of client ownership or de-prioritisation of the project	Y	N	N/A	N/A	N/A	N/A	N/A
4	Lack of supplier ownership or de-prioritisation of the project	N	N	N/A	N/A	N/A	N/A	N/A
5	Adversarial relationships and loss of trust between vendor and client	Y	N	N/A	N/A	N/A	N/A	N/A
6	No formal alignment of project with business strategy	Y	N	N/A	N/A	N/A	N/A	N/A
7	Communications breakdown between parties involved	N	Y	NEC	Custom	IT-IS	N/A	N/A
8	Functional Requirements not documented or unrealistic	Y	Y	NEC	Custom	IT-IS	N	N/A
9	Performance Requirements not documented or unrealistic	Y	Y	NEC	Custom	IT-IS	Y	N
10	Reliability Requirements not documented or unrealistic	Y	Y	NEC	Custom	IT-IS	Y	Y
11	Project Scope not documented or partially documented	Y	Y	NEC	Custom	IT-IS	Y	Y
12	Ineffective or poorly trained project managers	Y	N	NEC	N/A	N/A	N/A	N/A
13	Inadequate or non-functional change control process	Y	Y	NEC	Custom	IT-IS	Y	Y
14	Not well defined or lack of defined deliverable and associated deliverable dates	Y	Y	NEC	Custom	IT-IS	Y	Y
15	Criteria defining project success inadequate or undefined	Y	N	NEC	N/A	N/A	N/A	N/A
16	No business case for the project	N	N	N/A	N/A	N/A	N/A	N/A
17	No project status tracking or progress reporting	N	Y	NEC	Custom	IT-IS	N	N/A
18	Risk management, analysis and tracking not in place or inadequate	Y	Y	NEC	Custom	IT-IS	Y	Y
19	Delivery deadline not aligned with project schedule or project schedule calculated based on delivery deadline and not effort required	Y	Y	NEC	Custom	IT-IS	Y	Y
20	Management of project delays, revision of project based on delays encountered	Y	Y	NEC	Custom	IT-IS	Y	Y
21	Documentation on planning and estimation lacking or inadequate	Y	Y	NEC	Custom	IT-IS	Y	Y
22	Significant changes to the project, including Scope schedule or goals	Y	Y	NEC	Custom	IT-IS	Y	Y
23	Roles and responsibilities of team members are not clearly defined	Y	Y	NEC	Custom	IT-IS	Y	Y
24	Project communications lacking or not defined, including planning and resources	N	Y	NEC	Custom	IT-IS	N/A	N/A
25	Project management methodology not properly implemented or not being used at all	Y	Y	NEC	Custom	IT-IS	Y	Y
26	Project charter not created or incomplete	Y	Y	NEC	Custom	IT-IS	N	N/A
27	Key project deliverables are outside the locus of control of the project team	Y	Y	NEC	Custom	IT-IS	Y	Y
28	Commitment and belief of project team members in meeting the project scope within schedule is low	N	N	N/A	N/A	N/A	N/A	N/A
29	Key stakeholders are unavailable or only have limited availability for review sessions of project	N	N	N/A	N/A	N/A	N/A	N/A
30	Skills, knowledge or experience of resources on project team are lacking	Y	Y	NEC	Custom	IT-IS	Y	Y
31	Project resources are only part time assigned or become fully assigned to another project which is deemed of higher importance	Y	Y	NEC	Custom	IT-IS	Y	N
32	Over scheduling of subject matter experts	Y	N	N/A	N/A	N/A	N/A	N/A
33	Timely review and sign off on decisions, deliverables and documentation	Y	Y	NEC	Custom	IT-IS	Y	Y
34	Willingness of users (end users of the system) to be involved in and co-operate with the project	N	N	N/A	N/A	N/A	N/A	N/A
35	Limited user involvement due to capabilities in new system being vastly different from existing systems	N	N	N/A	N/A	N/A	N/A	N/A
36	Support teams and users perceive new system as a threat	N	N	N/A	N/A	N/A	N/A	N/A
37	Motivation and maintaining morale of team members throughout a project	N	N	N/A	N/A	N/A	N/A	N/A
38	Turnover of key project team members through the project lifecycle	Y	Y	NEC	Custom	IT-IS	N	N/A
39	Implementation of new or latest technology	N	Y	NEC	Custom	IT-IS	Y	Y
40	Availability and capacity constraints on technical communications infrastructure	Y	Y	NEC	Custom	IT-IS	Y	Y
41	Technical complexity	Y	Y	NEC	Custom	IT-IS	Y	N

Respondent 19

		Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA
1	Lack of commitment from top senior management (Schmidt, et al., 2001)	Y	N	N/A	N/A	N/A	N	N/A
2	Corporate instability and/or organisational change causing instability in the project	N	N	N/A	N/A	N/A	N/A	N/A
3	Lack of client ownership or de-prioritisation of the project	Y	N	N/A	N/A	N/A	N/A	N/A
4	Lack of supplier ownership or de-prioritisation of the project	Y	N	NEC	N/A	N/A	N/A	N/A
5	Adversarial relationships and loss of trust between vendor and client	N	N	N/A	N/A	N/A	N/A	N/A
6	No formal alignment of project with business strategy	N	N	N/A	N/A	N/A	N/A	N/A
7	Communications breakdown between parties involved	N	N	N/A	N/A	N/A	N/A	N/A
8	Functional Requirements not documented or unrealistic	N	N	N/A	N/A	N/A	N/A	N/A
9	Performance Requirements not documented or unrealistic	N	N	N/A	N/A	N/A	N/A	N/A
10	Reliability Requirements not documented or unrealistic	N	N	N/A	N/A	N/A	N/A	N/A
11	Project Scope not documented or partially documented	N	N	N/A	N/A	N/A	N/A	N/A
12	Ineffective or poorly trained project managers	N	N	N/A	N/A	N/A	N/A	N/A
13	Inadequate or non-functional change control process	N	N/A	N/A	N/A	N/A	N/A	N/A
14	Not well defined or lack of defined deliverable and associated deliverable dates	N	N/A	N/A	N/A	N/A	N/A	N/A
15	Criteria defining project success inadequate or undefined	Y	N	N/A	N/A	N/A	N/A	N/A
16	No business case for the project	N	N/A	N/A	N/A	N/A	N/A	N/A
17	No project status tracking or progress reporting	N	N/A	N/A	N/A	N/A	N/A	N/A
18	Risk management, analysis and tracking not in place or inadequate	N	Y	NEC	Standard	Generic	Y	Y
19	Delivery deadline not aligned with project schedule or project schedule calculated based on delivery deadline and not effort required	Y	N	N/A	N/A	N/A	N/A	N/A
20	Management of project delays, revision of project based on delays encountered	Y	Y	NEC	Standard	Generic	Y	Y
21	Documentation on planning and estimation lacking or inadequate	N	N/A	N/A	N/A	N/A	N/A	N/A
22	Significant changes to the project, including Scope schedule or goals	N	N/A	N/A	N/A	N/A	N/A	N/A
23	Roles and responsibilities of team members are not clearly defined	N	N/A	N/A	N/A	N/A	N/A	N/A
24	Project communications lacking or not defined, including planning and resources	N	N/A	N/A	N/A	N/A	N/A	N/A
25	Project management methodology not properly implemented or not being used at all	Y	Y	NEC	Standard	Generic	Y	Y
26	Project charter not created or incomplete	N	N/A	N/A	N/A	N/A	N/A	N/A
27	Key project deliverables are outside the locus of control of the project team	N	N/A	N/A	N/A	N/A	N	N/A
28	Commitment and belief of project team members in meeting the project scope within schedule is low	Y	N	N/A	N/A	N/A	N/A	N/A
29	Key stakeholders are unavailable or only have limited availability for review sessions of project	N	N/A	N/A	N/A	N/A	N/A	N/A
30	Skills, knowledge or experience of resources on project team are lacking	Y	Y	NEC	Standard	Generic	Y	Y
31	Project resources are only part time assigned or become fully assigned to another project which is deemed of higher importance	Y	Y	NEC	Standard	Generic	Y	Y
32	Over scheduling of subject matter experts	N	N/A	N/A	N/A	N/A	N/A	N/A
33	Timely review and sign off on decisions, deliverables and documentation	Y	N	N/A	N/A	N/A	N/A	N/A
34	Willingness of users (end users of the system) to be involved in and co-operate with the project	Y	N	N/A	N/A	N/A	N/A	N/A
35	Limited user involvement due to capabilities in new system being vastly different from existing systems	Y	Y	NEC	Standard	Generic	Y	Y
36	Support teams and users perceive new system as a threat	Y	N	N/A	N/A	N/A	N/A	N/A
37	Motivation and maintaining morale of team members throughout a project	Y	N	N/A	N/A	N/A	N/A	N/A
38	Turnover of key project team members through the project lifecycle	Y	Y	NEC	Standard	Generic	Y	Y
39	Implementation of new or latest technology	N	N/A	N/A	N/A	N/A	N/A	N/A
40	Availability and capacity constraints on technical communications infrastructure	N	N/A	N/A	N/A	N/A	N/A	N/A
41	Technical complexity	Y	Y	NEC	Standard	Generic	Y	Y

Respondent 20

		Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA
1	Lack of commitment from top senior management (Schmidt, et al., 2001)	N	Y	Custom	Custom	Generic	Y	Y
2	Corporate instability and/or organisational change causing instability in the project	N	Y	Custom	Standard	Generic	N	N/A
3	Lack of client ownership or de-prioritisation of the project	N	Y	Custom	Standard	Generic	Y	Y
4	Lack of supplier ownership or de-prioritisation of the project	N	Y	Custom	Standard	Generic	Y	Y
5	Adversarial relationships and loss of trust between vendor and client	Y	Y	Custom	Standard	Generic	Y	Y
6	No formal alignment of project with business strategy	Y	N	Custom	Standard	N/A	N	N/A
7	Communications breakdown between parties involved	Y	Y	Custom	Standard	Generic	Y	Y
8	Functional Requirements not documented or unrealistic	Y	Y	Custom	Custom	IT-IS	Y	Y
9	Performance Requirements not documented or unrealistic	Y	Y	Custom	Custom	IT-IS	Y	Y
10	Reliability Requirements not documented or unrealistic	N	Y	Custom	Custom	IT-IS	N	N/A
11	Project Scope not documented or partially documented	Y	Y	Custom	Standard	Generic	N	N/A
12	Ineffective or poorly trained project managers	Y	Y	Custom	Standard	Generic	Y	Y
13	Inadequate or non-functional change control process	N	Y	Custom	Standard	IT-IS	Y	Y
14	Not well defined or lack of defined deliverable and associated deliverable dates	Y	Y	Custom	Custom	IT-IS	Y	Y
15	Criteria defining project success inadequate or undefined	N	Y	Custom	Custom	IT-IS	Y	Y
16	No business case for the project	N	N	N/A	N/A	N/A	N/A	N/A
17	No project status tracking or progress reporting	N	Y	Custom	Standard	IT-IS	N	N/A
18	Risk management, analysis and tracking not in place or inadequate	N	Y	Custom	Standard	Generic	N	N/A
19	Delivery deadline not aligned with project schedule or project schedule calculated based on delivery deadline and not effort required	N	Y	Custom	Standard	Generic	N	N/A
20	Management of project delays, revision of project based on delays encountered	Y	Y	Custom	Standard	Generic	Y	Y
21	Documentation on planning and estimation lacking or inadequate	Y	Y	Custom	Custom	Generic	Y	Y
22	Significant changes to the project, including Scope schedule or goals	Y	Y	Custom	Custom	Generic	Y	Y
23	Roles and responsibilities of team members are not clearly defined	Y	Y	Custom	Custom	IT-IS	Y	Y
24	Project communications lacking or not defined, including planning and resources	Y	Y	Custom	Custom	Generic	Y	Y
25	Project management methodology not properly implemented or not being used at all	N	Y	Custom	Standard	Generic	Y	Y
26	Project charter not created or incomplete	N/A	N/A	N/A	N/A	N/A	N/A	N/A
27	Key project deliverables are outside the locus of control of the project team	N	Y	Custom	Standard	IT-IS	N	N/A
28	Commitment and belief of project team members in meeting the project scope within schedule is low	Y	Y	Custom	Custom	Generic	Y	Y
29	Key stakeholders are unavailable or only have limited availability for review sessions of project	Y	Y	Custom	Standard	Generic	Y	Y
30	Skills, knowledge or experience of resources on project team are lacking	Y	Y	Custom	Standard	IT-IS	Y	Y
31	Project resources are only part time assigned or become fully assigned to another project which is deemed of higher importance	Y	Y	Custom	Standard	Generic	Y	Y
32	Over scheduling of subject matter experts	Y	Y	Custom	Standard	Generic	Y	Y
33	Timely review and sign off on decisions, deliverables and documentation	N	Y	Custom	Custom	Generic	Y	Y
34	Willingness of users (end users of the system) to be involved in and co-operate with the project	Y	Y	Custom	Standard	Generic	Y	Y
35	Limited user involvement due to capabilities in new system being vastly different from existing systems	Y	Y	Custom	Standard	Generic	Y	Y
36	Support teams and users perceive new system as a threat	Y	Y	Custom	Standard	Generic	Y	Y
37	Motivation and maintaining morale of team members throughout a project	Y	N	N/A	N/A	N/A	N/A	N/A
38	Turnover of key project team members through the project lifecycle	Y	N	Custom	N/A	N/A	N/A	N/A
39	Implementation of new or latest technology	Y	N	Custom	Standard	Generic	Y	Y
40	Availability and capacity constraints on technical communications infrastructure	Y	Y	Custom	Standard	Generic	Y	Y
41	Technical complexity	Y	N	Custom	Standard	N/A	Y	Y

Respondent 21

		Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT-IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA
	21							
1	Lack of commitment from top senior management (Schmidt, et al., 2001)	Y	Y	Custom	Custom	IT-IS	Y	Y
2	Corporate instability and/or organisational change causing instability in the project	Y	N	Custom	Custom	IT-IS	Y	Y
3	Lack of client ownership or de-prioritisation of the project	Y	N	Custom	Custom	Generic	Y	Y
4	Lack of supplier ownership or de-prioritisation of the project	Y	Y	Custom	Custom	Generic	Y	Y
5	Adversarial relationships and loss of trust between vendor and client	Y	N	Custom	Standard	IT-IS	Y	Y
6	No formal alignment of project with business strategy	Y	N	Custom	Standard	Generic	N	N/A
7	Communications breakdown between parties involved	Y	Y	Custom	Standard	Generic	Y	Y
8	Functional Requirements not documented or unrealistic	Y	Y	Custom	Standard	Generic	Y	Y
9	Performance Requirements not documented or unrealistic	Y	Y	Custom	Custom	Generic	Y	N
10	Reliability Requirements not documented or unrealistic	Y	Y	Custom	Custom	IT-IS	N	N/A
11	Project Scope not documented or partially documented	Y	Y	Custom	Custom	Generic	Y	Y
12	Ineffective or poorly trained project managers	Y	N	Custom	Standard	IT-IS	N	N/A
13	Inadequate or non-functional change control process	Y	N	Custom	Custom	IT-IS	N	N/A
14	Not well defined or lack of defined deliverable and associated deliverable dates	Y	Y	Custom	Standard	IT-IS	Y	Y
15	Criteria defining project success inadequate or undefined	Y	Y	Custom	Standard	Generic	N	N/A
16	No business case for the project	N	N	Custom	Standard	IT-IS	N	N/A
17	No project status tracking or progress reporting	Y	N	Custom	Standard	Generic	N	N/A
18	Risk management, analysis and tracking not in place or inadequate	Y	N	Custom	Standard	Generic	N	N/A
19	Delivery deadline not aligned with project schedule or project schedule calculated based on delivery deadline and not effort required	Y	N	Custom	Standard	Generic	Y	Y
20	Management of project delays, revision of project based on delays encountered	Y	Y	Custom	Custom	IT-IS	Y	N
21	Documentation on planning and estimation lacking or inadequate	Y	N	Custom	Standard	Generic	N	N/A
22	Significant changes to the project, including Scope schedule or goals	Y	Y	Custom	Standard	Generic	Y	N
23	Roles and responsibilities of team members are not clearly defined	Y	Y	Custom	Custom	IT-IS	N	N/A
24	Project communications lacking or not defined, including planning and resources	Y	N	Custom	Custom	Generic	N	N/A
25	Project management methodology not properly implemented or not being used at all	Y	N	Custom	Standard	Generic	N	N/A
26	Project charter not created or incomplete	Y	Y	Custom	Standard	Generic	N	N/A
27	Key project deliverables are outside the locus of control of the project team	Y	Y	Custom	Standard	IT-IS	Y	N
28	Commitment and belief of project team members in meeting the project scope within schedule is low	Y	N	Custom	Standard	IT-IS	N	N/A
29	Key stakeholders are unavailable or only have limited availability for review sessions of project	Y	N	Custom	Custom	IT-IS	Y	N
30	Skills, knowledge or experience of resources on project team are lacking	Y	Y	Custom	Custom	IT-IS	Y	N
31	Project resources are only part time assigned or become fully assigned to another project which is deemed of higher importance	Y	N	Custom	Custom	IT-IS	Y	N
32	Over scheduling of subject matter experts	Y	Y	Custom	Custom	IT-IS	Y	N
33	Timely review and sign off on decisions, deliverables and documentation	Y	Y	Custom	Custom	Generic	Y	Y
34	Willingness of users (end users of the system) to be involved in and co-operate with the project	Y	Y	Custom	Custom	IT-IS	N	N/A
35	Limited user involvement due to capabilities in new system being vastly different from existing systems	Y	N	Custom	Standard	IT-IS	N	N/A
36	Support teams and users perceive new system as a threat	Y	N	Custom	Custom	IT-IS	N	N/A
37	Motivation and maintaining morale of team members throughout a project	Y	N	Custom	Standard	Generic	N	N/A
38	Turnover of key project team members through the project lifecycle	Y	Y	Custom	Custom	IT-IS	N	N/A
39	Implementation of new or latest technology	Y	N	Custom	Standard	Generic	N	N/A
40	Availability and capacity constraints on technical communications infrastructure	Y	Y	Custom	Custom	IT-IS	N	N/A
41	Technical complexity	Y	N	Custom	Standard	Generic	N	N/A

Respondent 22

		Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA
1	Lack of commitment from top senior management (Schmidt, et al., 2001)	Y	N	NEC	Standard	Generic	N/A	N/A
2	Corporate instability and/or organisational change causing instability in the project	Y	N	NEC	Standard	Generic	N/A	N/A
3	Lack of client ownership or de-prioritisation of the project	Y	N	NEC	Standard	Generic	N/A	N/A
4	Lack of supplier ownership or de-prioritisation of the project	N	N	N/A	N/A	N/A	N/A	N/A
5	Adversarial relationships and loss of trust between vendor and client	Y	Y	NEC	Standard	Generic	Y	N
6	No formal alignment of project with business strategy	Y	N	NEC	Standard	Generic	N/A	N/A
7	Communications breakdown between parties involved	N	N	NEC	Standard	Generic	N/A	N/A
8	Functional Requirements not documented or unrealistic	Y	Y	NEC	Standard	Generic	Y	Y
9	Performance Requirements not documented or unrealistic	Y	N	NEC	Standard	Generic	N	N/A
10	Reliability Requirements not documented or unrealistic	Y	N	NEC	Standard	Generic	N/A	N/A
11	Project Scope not documented or partially documented	Y	N	NEC	Standard	Generic	N/A	N/A
12	Ineffective or poorly trained project managers	Y	N	NEC	Standard	Generic	N/A	N/A
13	Inadequate or non-functional change control process	N	N	NEC	Standard	Generic	N/A	N/A
14	Not well defined or lack of defined deliverable and associated deliverable dates	N	Y	NEC	Standard	Generic	Y	Y
15	Criteria defining project success inadequate or undefined	Y	N	NEC	Standard	Generic	N/A	N/A
16	No business case for the project	N	N	NEC	Standard	Generic	N/A	N/A
17	No project status tracking or progress reporting	N	N	NEC	Standard	Generic	N/A	N/A
18	Risk management, analysis and tracking not in place or inadequate	Y	N	NEC	Standard	Generic	N/A	N/A
19	Delivery deadline not aligned with project schedule or project schedule calculated based on delivery deadline and not effort required	Y	N	NEC	Standard	Generic	N/A	N/A
20	Management of project delays, revision of project based on delays encountered	Y	N	NEC	Standard	Generic	N/A	N/A
21	Documentation on planning and estimation lacking or inadequate	Y	N	NEC	Standard	Generic	N/A	N/A
22	Significant changes to the project, including Scope schedule or goals	N	Y	NEC	Standard	Generic	N/A	N/A
23	Roles and responsibilities of team members are not clearly defined	N	N	NEC	Standard	Generic	N/A	N/A
24	Project communications lacking or not defined, including planning and resources	Y	N	NEC	Standard	Generic	N/A	N/A
25	Project management methodology not properly implemented or not being used at all	Y	N	NEC	Standard	Generic	N/A	N/A
26	Project charter not created or incomplete	Y	N	NEC	Standard	Generic	N/A	N/A
27	Key project deliverables are outside the locus of control of the project team	Y	N	NEC	Standard	Generic	N/A	N/A
28	Commitment and belief of project team members in meeting the project scope within schedule is low	Y	N	NEC	Standard	Generic	N/A	N/A
29	Key stakeholders are unavailable or only have limited availability for review sessions of project	Y	N	NEC	Standard	Generic	N/A	N/A
30	Skills, knowledge or experience of resources on project team are lacking	Y	N	NEC	Standard	Generic	N/A	N/A
31	Project resources are only part time assigned or become fully assigned to another project which is deemed of higher importance	N	N/A	NEC	Standard	Generic	N/A	N/A
32	Over scheduling of subject matter experts	Y	N	NEC	Standard	Generic	N/A	N/A
33	Timely review and sign off on decisions, deliverables and documentation	Y	N	NEC	Standard	Generic	N/A	N/A
34	Willingness of users (end users of the system) to be involved in and co-operate with the project	Y	N	NEC	Standard	Generic	N/A	N/A
35	Limited user involvement due to capabilities in new system being vastly different from existing systems	N	N	NEC	Standard	Generic	N/A	N/A
36	Support teams and users perceive new system as a threat	Y	N	NEC	Standard	Generic	N/A	N/A
37	Motivation and maintaining morale of team members throughout a project	Y	N	NEC	Standard	Generic	N/A	N/A
38	Turnover of key project team members through the project lifecycle	N	N	NEC	Standard	Generic	N/A	N/A
39	Implementation of new or latest technology	Y	N	NEC	Standard	Generic	N/A	N/A
40	Availability and capacity constraints on technical communications infrastructure	Y	N	NEC	Standard	Generic	N/A	N/A
41	Technical complexity	Y	N	NEC	Standard	Generic	N/A	N/A

Respondent 23

		Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA
1	Lack of commitment from top senior management (Schmidt, et al., 2001)	N	N	NEC	Standard	Generic	N/A	N/A
2	Corporate instability and/or organisational change causing instability in the project	Y	Y	NEC	Standard	Generic	N	N/A
3	Lack of client ownership or de-prioritisation of the project	Y	Y	NEC	Standard	Generic	Y	Y
4	Lack of supplier ownership or de-prioritisation of the project	Y	Y	NEC	Standard	Generic	N/A	N/A
5	Adversarial relationships and loss of trust between vendor and client	Y	N	NEC	Standard	Generic	N/A	N/A
6	No formal alignment of project with business strategy	N	N	NEC	Standard	Generic	N/A	N/A
7	Communications breakdown between parties involved	N	N	NEC	Standard	Generic	N/A	N/A
8	Functional Requirements not documented or unrealistic	N	N	NEC	Standard	Generic	N/A	N/A
9	Performance Requirements not documented or unrealistic	N	N	NEC	Standard	Generic	N/A	N/A
10	Reliability Requirements not documented or unrealistic	N	N/A	NEC	Standard	Generic	N/A	N/A
11	Project Scope not documented or partially documented	Y	Y	NEC	Standard	Generic	Y	Y
12	Ineffective or poorly trained project managers	Y	N	NEC	Standard	Generic	N/A	N/A
13	Inadequate or non-functional change control process	N	Y	NEC	Standard	Generic	N/A	N/A
14	Not well defined or lack of defined deliverable and associated deliverable dates	Y	Y	NEC	Standard	Generic	N	N
15	Criteria defining project success inadequate or undefined	N	Y	NEC	Standard	Generic	N	N
16	No business case for the project	N	N	NEC	Standard	Generic	N	N/A
17	No project status tracking or progress reporting	N	Y	NEC	Standard	Generic	N	N/A
18	Risk management, analysis and tracking not in place or inadequate	Y	Y	NEC	Standard	Generic	N	N/A
19	Delivery deadline not aligned with project schedule or project schedule calculated based on delivery deadline and not effort required	Y	Y	NEC	Standard	Generic	N/A	N/A
20	Management of project delays, revision of project based on delays encountered	Y	Y	NEC	Standard	Generic	Y	Y
21	Documentation on planning and estimation lacking or inadequate	N	N	NEC	Standard	Generic	N/A	N/A
22	Significant changes to the project, including Scope schedule or goals	Y	Y	NEC	Standard	Generic	Y	Y
23	Roles and responsibilities of team members are not clearly defined	N	Y	NEC	Standard	Generic	N	N
24	Project communications lacking or not defined, including planning and resources	Y	Y	NEC	Standard	Generic	Y	Y
25	Project management methodology not properly implemented or not being used at all	N	Y	NEC	Standard	IT-IS	N	N/A
26	Project charter not created or incomplete	N/A	N	N/A	N/A	N/A	N/A	N/A
27	Key project deliverables are outside the locus of control of the project team	Y	Y	NEC	Standard	Generic	N	N/A
28	Commitment and belief of project team members in meeting the project scope within schedule is low	Y	N	NEC	Standard	Generic	N/A	N/A
29	Key stakeholders are unavailable or only have limited availability for review sessions of project	Y	N	NEC	Standard	Generic	N/A	N/A
30	Skills, knowledge or experience of resources on project team are lacking	Y	N	NEC	Standard	Generic	N	N/A
31	Project resources are only part time assigned or become fully assigned to another project which is deemed of higher importance	Y	N	NEC	Standard	Generic	N/A	N/A
32	Over scheduling of subject matter experts	Y	N	NEC	Standard	Generic	N/A	N/A
33	Timely review and sign off on decisions, deliverables and documentation	Y	Y	NEC	Standard	Generic	N	N/A
34	Willingness of users (end users of the system) to be involved in and co-operate with the project	N	N	NEC	Standard	Generic	N/A	N/A
35	Limited user involvement due to capabilities in new system being vastly different from existing systems	Y	Y	NEC	Standard	Generic	N	N/A
36	Support teams and users perceive new system as a threat	Y	N	N/A	N/A	N/A	N/A	N/A
37	Motivation and maintaining morale of team members throughout a project	Y	N	NEC	Standard	Generic	N/A	N/A
38	Turnover of key project team members through the project lifecycle	Y	N	NEC	Standard	Generic	N/A	N/A
39	Implementation of new or latest technology	Y	N	NEC	Standard	Generic	N/A	N/A
40	Availability and capacity constraints on technical communications infrastructure	N	N	NEC	Standard	Generic	N/A	N/A
41	Technical complexity	Y	N	NEC	Standard	Generic	N/A	N/A

Respondent 24

		Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT-IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA
1	Lack of commitment from top senior management (Schmidt, et al., 2001)	Y	N	NEC	Custom	N/A	N/A	N/A
2	Corporate instability and/or organisational change causing instability in the project	Y	N	NEC	Custom	N/A	N/A	N/A
3	Lack of client ownership or de-prioritisation of the project	Y	N	NEC	Custom	N/A	N/A	N/A
4	Lack of supplier ownership or de-prioritisation of the project	Y	Y	NEC	Custom	IT-IS	Y	Y
5	Adversarial relationships and loss of trust between vendor and client	Y	N	NEC	Custom	N/A	N/A	N/A
6	No formal alignment of project with business strategy	N	N	NEC	Custom	N/A	N/A	N/A
7	Communications breakdown between parties involved	Y	N	NEC	Custom	N/A	N/A	N/A
8	Functional Requirements not documented or unrealistic	Y	Y	NEC	Custom	Generic	Y	N
9	Performance Requirements not documented or unrealistic	Y	Y	NEC	Custom	IT-IS	Y	Y
10	Reliability Requirements not documented or unrealistic	Y	Y	NEC	Custom	IT-IS	Y	Y
11	Project Scope not documented or partially documented	Y	Y	NEC	Custom	Generic	N/A	N/A
12	Ineffective or poorly trained project managers	Y	N	NEC	Custom	N/A	N/A	N/A
13	Inadequate or non-functional change control process	Y	N	NEC	Custom	N/A	N/A	N/A
14	Not well defined or lack of defined deliverable and associated deliverable dates	Y	Y	NEC	Custom	IT-IS	Y	N
15	Criteria defining project success inadequate or undefined	Y	Y	NEC	Custom	Generic	N	N/A
16	No business case for the project	N	Y	NEC	Custom	IT-IS	N/A	N/A
17	No project status tracking or progress reporting	N	Y	NEC	Custom	IT-IS	N/A	N/A
18	Risk management, analysis and tracking not in place or inadequate	N	N	NEC	Custom	N/A	N/A	N/A
19	Delivery deadline not aligned with project schedule or project schedule calculated based on delivery deadline and not effort required	Y	Y	NEC	Custom	Generic	Y	N
20	Management of project delays, revision of project based on delays encountered	Y	Y	NEC	Custom	Generic	Y	Y
21	Documentation on planning and estimation lacking or inadequate	Y	N	NEC	Custom	Generic	N/A	N/A
22	Significant changes to the project, including Scope schedule or goals	Y	Y	NEC	Custom	Generic	Y	Y
23	Roles and responsibilities of team members are not clearly defined	Y	N	NEC	Custom	N/A	N/A	N/A
24	Project communications lacking or not defined, including planning and resources	Y	N	NEC	Custom	N/A	N/A	N/A
25	Project management methodology not properly implemented or not being used at all	N	Y	NEC	Custom	Generic	N/A	N/A
26	Project charter not created or incomplete	N	N	NEC	Custom	N/A	N/A	N/A
27	Key project deliverables are outside the locus of control of the project team	Y	Y	NEC	Custom	Generic	Y	N
28	Commitment and belief of project team members in meeting the project scope within schedule is low	Y	N	NEC	Custom	N/A	N/A	N/A
29	Key stakeholders are unavailable or only have limited availability for review sessions of project	Y	N	NEC	Custom	N/A	N/A	N/A
30	Skills, knowledge or experience of resources on project team are lacking	Y	Y	NEC	Custom	Generic	y	Y
31	Project resources are only part time assigned or become fully assigned to another project which is deemed of higher importance	Y	N	NEC	Custom	N/A	N/A	N/A
32	Over scheduling of subject matter experts	Y	N	NEC	Custom	N/A	N/A	N/A
33	Timely review and sign off on decisions, deliverables and documentation	Y	Y	NEC	Custom	Generic	N	N/A
34	Willingness of users (end users of the system) to be involved in and co-operate with the project	Y	N	NEC	Custom	N/A	N/A	N/A
35	Limited user involvement due to capabilities in new system being vastly different from existing systems	Y	N	NEC	Custom	N/A	N/A	N/A
36	Support teams and users perceive new system as a threat	Y	N	NEC	Custom	N/A	N/A	N/A
37	Motivation and maintaining morale of team members throughout a project	Y	N	NEC	Custom	N/A	N/A	N/A
38	Turnover of key project team members through the project lifecycle	Y	Y	NEC	Custom	Generic	Y	N
39	Implementation of new or latest technology	N	N	NEC	Custom	N/A	N/A	N/A
40	Availability and capacity constraints on technical communications infrastructure	Y	Y	NEC	Custom	Generic	N	N/A
41	Technical complexity	Y	N	NEC	Custom	N/A	N/A	N/A

APPENDIX B – RESPONSES CONSOLIDATED PER QUESTION

Question 1

Lack of commitment from top senior management (Schmidt, et al., 2001)							
	Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA
1	Y	N	Custom	Custom	IT-IS	N	N/A
2	Y	N	Custom	Custom	Generic	N	N/A
3	Y	N	N/A	Custom	N/A	N/A	N/A
4	Y	N	NEC	Standard	Generic	N/A	N/A
5	Y	Y	NEC	Standard	Generic	N	N/A
6	Y	N	Custom	N/A	N/A	N/A	N/A
7	Y	N	NEC	N/A	N/A	N/A	N/A
8	Y	Y	NEC	Custom	Generic	Y	Y
9	N	N	Custom	Custom	IT-IS	N	N/A
10	Y	N	Custom	Custom	IT-IS	N	N
11	Y	N	NEC	Custom	IT-IS	Y	N
12	Y	N	NEC	Standard	Generic	N/A	N/A
13	Y	N	N/A	N/A	N/A	N/A	N/A
14	Y	N	Custom	Standard	N/A	N/A	N/A
15	Y	N	NEC	Custom	Generic	N/A	N/A
16	N	N	NEC	N/A	Generic	N/A	N/A
17	Y	N	NEC	Custom	IT-IS	N	N/A
18	N	N	N/A	N/A	N/A	N	N/A
19	Y	N	N/A	N/A	N/A	N	N/A
20	N	Y	Custom	Custom	Generic	Y	Y
21	Y	Y	Custom	Custom	IT-IS	Y	Y
22	Y	N	NEC	Standard	Generic	N/A	N/A
23	N	N	NEC	Standard	Generic	N/A	N/A
24	Y	N	NEC	Custom	N/A	N/A	N/A

Question 2

Corporate instability and/or organisational change causing instability in the project							
	Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA
1	Y	N	Custom	Custom	N/A	N	N/A
2	Y	N	Custom	Custom	Generic	N	N/A
3	Y	N	N/A	Custom	N/A	N/A	N/A
4	Y	N	NEC	Standard	GENERIC	N/A	N/A
5	Y	Y	NEC	Standard	Generic	N	N/A
6	Y	N	Custom	N/A	N/A	N/A	N/A
7	Y	N	NEC	N/A	N/A	N/A	N/A
8	Y	N	NEC	Custom	Generic	Y	N
9	Y	N	Custom	Custom	IT-IS	N	N/A
#	N	N/A	Custom	Custom	IT-IS	N	N/A
#	Y	N	NEC	N/A	N/A	N	N/A
#	Y	N	NEC	Standard	N/A	N/A	N/A
#	Y	N	N/A	N/A	N/A	N/A	N/A
#	Y	N	Custom	Standard	N/A	N/A	N/A
#	Y	N	NEC	Custom	Generic	N/A	N/A
#	N	N	NEC	N/A	Generic	N/A	N/A
#	Y	Y	NEC	Custom	IT-IS	N	N/A
#	N	N	N/A	N/A	N/A	N/A	N/A
#	N	N	N/A	N/A	N/A	N/A	N/A
#	N	Y	Custom	Standard	Generic	N	N/A
#	Y	N	Custom	Custom	IT-IS	Y	Y
#	Y	N	NEC	Standard	Generic	N/A	N/A
#	Y	Y	NEC	Standard	Generic	N	N/A
#	Y	N	NEC	Custom	N/A	N/A	N/A

Question 3

Lack of client ownership or de-prioritisation of the project							
	Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA
1	Y	N	Custom	Custom	IT-IS	N	N/A
2	Y	N	Custom	Custom	Generic	N	N/A
3	N	Y	N/A	Custom	IT-IS	N	N/A
4	Y	N	NEC	Standard	Generic	N/A	N/A
5	N	Y	N/A	N/A	N/A	N/A	N/A
6	N	N	Custom	N/A	N/A	N/A	N/A
7	Y	N	NEC	N/A	N/A	N/A	N/A
8	Y	N	NEC	Custom	Generic	N	N/A
9	N	N	Custom	Custom	IT-IS	N	N/A
10	Y	N	Custom	Custom	IT-IS	N	N/A
11	Y	N	NEC	Standard	N/A	N	N/A
12	Y	N	NEC	Standard	N/A	N/A	N/A
13	Y	N	N/A	N/A	N/A	N/A	N/A
14	Y	N	Custom	Standard	Generic	N/A	N/A
15	Y	N	NEC	Custom	Generic	N/A	N/A
16	N	N	NEC	N/A	Generic	N/A	N/A
17	Y	N	NEC	Custom	IT-IS	N	N/A
18	Y	N	N/A	N/A	N/A	N/A	N/A
19	Y	N	N/A	N/A	N/A	N/A	N/A
20	N	Y	Custom	Standard	Generic	Y	Y
21	Y	N	Custom	Custom	Generic	Y	Y
22	Y	N	NEC	Standard	Generic	N/A	N/A
23	Y	Y	NEC	Standard	Generic	Y	Y
24	Y	N	NEC	Custom	N/A	N/A	N/A

Question 4

Lack of supplier ownership or de-prioritisation of the project							
	Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA
1	N	N	Custom	Standard	GENERIC	N	N/A
2	Y	Y	NEC	Custom	IT-IS	Y	N
3	Y	Y	N/A	Custom	IT-IS	Y	Y
4	Y	Y	NEC	Standard	GENERIC	N/A	N/A
5	Y	Y	Custom	Custom	IT-IS	Y	Y
6	Y	Y	Custom	Custom	IT-IS	Y	Y
7	N	Y	NEC	Standard	N/A	N/A	N/A
8	Y	Y	NEC	Standard	GENERIC	Y	Y
9	N	Y	Custom	Custom	IT-IS	N	N/A
10	Y	N	Custom	Custom	IT-IS	N	N/A
11	Y	N	NEC	Standard	N/A	N	N/A
12	Y	N	NEC	Standard	GENERIC	N/A	N/A
13	N	N	N/A	N/A	N/A	N/A	N/A
14	Y	N	Custom	Standard	Generic	N/A	N/A
15	Y	Y	NEC	Custom	Generic	Y	N
16	N	N	NEC	N/A	Generic	N/A	N/A
17	Y	N	NEC	CUSTOM	IT-IS	N	N/A
18	N	N	N/A	N/A	N/A	N/A	N/A
19	Y	N	NEC	N/A	N/A	N/A	N/A
20	N	Y	Custom	Standard	Generic	Y	Y
21	Y	Y	Custom	Custom	Generic	Y	Y
22	N	N	N/A	N/A	N/A	N/A	N/A
23	Y	Y	NEC	Standard	Generic	N/A	N/A
24	Y	Y	NEC	Custom	IT-IS	Y	Y

Question 5

Adversarial relationships and loss of trust between vendor and client							
Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	
1	N	N	Custom	Custom	Generic	N	N/A
2	Y	N	Custom	Custom	IT-IS	N	N/A
3	Y	Y	N/A	Custom	IT-IS	Y	Y
4	Y	N	NEC	Standard	Generic	N/A	N/A
5	Y	Y	NEC	Standard	Generic	Y	Y
6	Y	Y	Custom	Custom	IT-IS	Y	N
7	Y	Y	NEC	Custom	IT-IS	Y	N
8	Y	Y	NEC	Standard	Generic	Y	Y
9	Y	N	Custom	Custom	IT-IS	N	N/A
#	Y	N	Custom	Custom	IT-IS	N	N/A
#	Y	N	NEC	N/A	N/A	N	N/A
#	y	N	NEC	Standard	N/A	N/A	N/A
#	Y	Y	NEC	Standard	Generic	N	N/A
#	Y	N	Custom	Standard	Generic	N	N
#	Y	Y	NEC	Custom	Generic	Y	N
#	N	N	NEC	N/A	Generic	N/A	N/A
#	Y	N	NEC	Custom	IT-IS	N/A	N/A
#	Y	N	N/A	N/A	N/A	N/A	N/A
#	N	N	N/A	N/A	N/A	N/A	N/A
#	Y	Y	Custom	Standard	Generic	Y	Y
#	Y	N	Custom	Standard	IT-IS	Y	Y
#	Y	Y	NEC	Standard	Generic	Y	N
#	Y	N	NEC	Standard	Generic	N/A	N/A
#	Y	N	NEC	Custom	N/A	N/A	N/A

Question 6

No formal alignment of project with business strategy							
Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	
1	N	N	Custom	Custom	N/A	N	N/A
2	Y	N	Custom	Custom	IT-IS	N	N/A
3	N	Y	N/A	Custom	IT-IS	N/A	N/A
4	y	N	NEC	Standard	Generic	N/A	N/A
5	N	Y	N/A	N/A	N/A	N/A	N/A
6	N	N	Custom	N/A	N/A	N/A	N/A
7	Y	N	NEC	N/A	N/A	N/A	N/A
8	N	N	NEC	Standard	Generic	N/A	N/A
9	N	N	Custom	Custom	IT-IS	N	N/A
10	N	N/A	N/A	N/A	N/A	N	N/A
11	Y	N	NEC	N/A	N/A	N	N/A
12	Y	N	NEC	Standard	N/A	N/A	N/A
13	Y	N	N/A	N/A	N/A	N/A	N/A
14	Y	N	Custom	Standard	Generic	N	N
15	N	N	NEC	Custom	Generic	N/A	N/A
16	N	N	NEC	N/A	Generic	N/A	N/A
17	Y	N	NEC	Custom	IT-IS	N	N/A
18	Y	N	N/A	N/A	N/A	N/A	N/A
19	N	N	N/A	N/A	N/A	N/A	N/A
20	Y	N	Custom	Standard	N/A	N	N/A
21	Y	N	Custom	Standard	Generic	N	N/A
22	Y	N	NEC	Standard	Generic	N/A	N/A
23	N	N	NEC	Standard	Generic	N/A	N/A
24	N	N	NEC	Custom	N/A	N/A	N/A

Question 7

Communications breakdown between parties involved							
	Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA
1	N	N	Custom	Custom	IT-IS	N	N/A
2	Y	N	Custom	Custom	IT-IS	N	N/A
3	Y	Y	N/A	Custom	IT-IS	Y	Y
4	Y	N	NEC	Standard	Generic	N/A	N/A
5	Y	Y	Custom	Standard	Generic	N	N/A
6	Y	Y	Custom	Custom	IT-IS	Y	Y
7	Y	Y	NEC	Standard	Generic	Y	Y
8	Y	N	NEC	Standard	Generic	N/A	N/A
9	N	Y	Custom	Custom	IT-IS	N	N/A
10	Y	Y	Custom	Custom	IT-IS	N	N/A
11	Y	N	NEC	N/A	N/A	N	N/A
12	Y	N	NEC	Standard	N/A	N/A	N/A
13	Y	Y	NEC	Standard	Generic	N	N/A
14	Y	Y	Custom	Standard	Generic	N/A	N
15	Y	Y	NEC	Custom	Generic	Y	N
16	N	N	NEC	N/A	Generic	N/A	N/A
17	Y	Y	NEC	Custom	IT-IS	N	N/A
18	N	Y	NEC	Custom	IT-IS	N/A	N/A
19	N	N	N/A	N/A	N/A	N/A	N/A
20	Y	Y	Custom	Standard	Generic	Y	Y
21	Y	Y	Custom	Standard	Generic	Y	Y
22	N	N	NEC	Standard	Generic	N/A	N/A
23	N	N	NEC	Standard	Generic	N/A	N/A
24	Y	N	NEC	Custom	N/A	N/A	N/A

Question 8

Functional Requirements not documented or unrealistic							
	Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA
1	N	N	Custom	Standard	IT-IS	N	N/A
2	Y	N	Custom	Custom	IT-IS	N	N/A
3	N	Y	N/A	Custom	IT-IS	N/A	N/A
4	Y	N	NEC	Standard	Generic	N/A	N/A
5	Y	Y	Custom	Standard	IT-IS	Y	N
6	Y	Y	Custom	Custom	IT-IS	Y	Y
7	Y	Y	NEC	Standard	IT-IS	Y	N
8	Y	Y	NEC	Custom	Generic	Y	Y
9	Y	N	Custom	Custom	IT-IS	Y	Y
10	Y	Y	Custom	Custom	IT-IS	Y	Y
11	Y	Y	NEC	Custom	IT-IS	N	N/A
12	Y	N	NEC	Standard	N/A	N/A	N/A
13	Y	Y	NEC	Standard	Generic	N	N/A
14	Y	N	Custom	Standard	Generic	N/A	N
15	N	N	NEC	Custom	Generic	N/A	N/A
16	N	N	NEC	N/A	Generic	N/A	N/A
17	Y	N	NEC	CUSTOM	IT-IS	N	N/A
18	Y	Y	NEC	Custom	IT-IS	N	N/A
19	N	N	N/A	N/A	N/A	N/A	N/A
20	Y	Y	Custom	Custom	IT-IS	Y	Y
21	Y	Y	Custom	Standard	Generic	Y	Y
22	Y	Y	NEC	Standard	Generic	Y	Y
23	N	N	NEC	Standard	Generic	N/A	N/A
24	Y	Y	NEC	Custom	Generic	Y	N

Question 9

Performance Requirements not documented or unrealistic							
	Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA
1	Y	Y	Custom	Custom	IT-IS	Y	N
2	Y	N	NEC	Standard	IT-IS	Y	N
3	N	Y	N/A	Custom	IT-IS	N/A	N/A
4	Y	Y	NEC	STANDARD	Generic	Y	N
5	Y	Y	N/A	Standard	IT-IS	Y	N
6	Y	Y	Custom	Custom	IT-IS	Y	Y
7	Y	Y	NEC	Standard	Generic	Y	Y
8	Y	N	NEC	Standard	Generic	N	N
9	Y	Y	Custom	Custom	IT-IS	Y	N
10	Y	Y	Custom	Custom	IT-IS	N	N/A
11	Y	Y	NEC	Custom	IT-IS	N	N/A
12	Y	N	NEC	Standard	N/A	N/A	N/A
13	Y	Y	NEC	Standard	Generic	N	N/A
14	Y	N	Custom	Standard	Generic	Y	N
15	Y	Y	NEC	Custom	Generic	Y	N
16	Y	Y	NEC	Custom	IT-IS	Y	Y
17	Y	N	NEC	CUSTOM	IT-IS	N	N/A
18	Y	Y	NEC	Custom	IT-IS	Y	N
19	N	N	N/A	N/A	N/A	N/A	N/A
20	Y	Y	Custom	Custom	IT-IS	Y	Y
21	Y	Y	Custom	Custom	Generic	Y	N
22	Y	N	NEC	Standard	Generic	N	N/A
23	N	N	NEC	Standard	Generic	N/A	N/A
24	Y	Y	NEC	Custom	IT-IS	Y	Y

Question 10

Reliability Requirements not documented or unrealistic							
	Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA
1	Y	Y	Custom	Custom	IT-IS	Y	N
2	Y	N	NEC	Standard	IT-IS	Y	N
3	N	Y	N/A	Custom	IT-IS	N/A	N/A
4	Y	Y	NEC	Standard	GENERIC	Y	N
5	Y	Y	Custom	Custom	IT-IS	Y	N
6	Y	Y	Custom	Custom	IT-IS	Y	Y
7	Y	Y	NEC	Standard	IT-IS	Y	Y
8	Y	N	NEC	Standard	GENERIC	N/A	N/A
9	N	N/A	Custom	Custom	N/A	N/A	N/A
10	N	N/A	N/A	N/A	N/A	N	N/A
11	Y	N	NEC	Custom	IT-IS	N	N/A
12	Y	N	NEC	Standard	N/A	N/A	N/A
13	Y	Y	NEC	Standard	Generic	N	N/A
14	Y	N	Custom	Standard	Generic	N	N
15	Y	Y	NEC	Custom	Generic	Y	N
16	N	Y	NEC	Custom	IT-IS	N	N/A
17	Y	Y	NEC	Custom	IT-IS	N	N/A
18	Y	Y	NEC	Custom	IT-IS	Y	Y
19	N	N	N/A	N/A	N/A	N/A	N/A
20	N	Y	Custom	Custom	IT-IS	N	N/A
21	Y	Y	Custom	Custom	IT-IS	N	N/A
22	Y	N	NEC	Standard	Generic	N/A	N/A
23	N	N/A	NEC	Standard	Generic	N/A	N/A
24	Y	Y	NEC	Custom	IT-IS	Y	Y

Question 11

Project Scope not documented or partially documented							
	Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA
1	Y	Y	Custom	Standard	IT-IS	N	N/A
2	Y	N	Custom	Custom	IT-IS	N	N/A
3	N	Y	N/A	Custom	IT-IS	N/A	N/A
4	Y	Y	NEC	Standard	Generic	N/A	N/A
5	Y	Y	Custom	Standard	N/A	Y	N
6	Y	Y	Custom	Custom	IT-IS	Y	Y
7	Y	N	NEC	N/A	N/A	N/A	N/A
8	Y	N	NEC	Custom	Generic	N/A	N/A
9	Y	N	Custom	Custom	IT-IS	N	N/A
10	Y	Y	Custom	Custom	IT-IS	Y	Y
11	Y	N	NEC	Custom	IT-IS	N	N/A
12	Y	Y	NEC	Standard	N/A	Y	Y
13	N	N	NEC	Standard	Generic	N	N/A
14	Y	N	Custom	Standard	Generic	N	N
15	Y	N	NEC	Custom	Generic	N/A	N/A
16	N	Y	NEC	Custom	IT-IS	Y	Y
17	Y	Y	NEC	Custom	IT-IS	N	N/A
18	Y	Y	NEC	Custom	IT-IS	Y	Y
19	N	N	N/A	N/A	N/A	N/A	N/A
20	Y	Y	Custom	Standard	Generic	N	N/A
21	Y	Y	Custom	Custom	Generic	Y	Y
22	Y	N	NEC	Standard	Generic	N/A	N/A
23	Y	Y	NEC	Standard	Generic	Y	Y
24	Y	Y	NEC	Custom	Generic	N/A	N/A

Question 12

Ineffective or poorly trained project managers							
	Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA
1	Y	N	Custom	Standard	IT-IS	N	N/A
2	Y	N	NEC	Custom	Generic	Y	N
3	Y	Y	N/A	Custom	IT-IS	Y	Y
4	Y	N	NEC	Standard	GENERIC	N/A	N/A
5	Y	Y	NEC	Standard	N/A	N	N/A
6	N	N	Custom	N/A	N/A	N/A	N/A
7	Y	Y	NEC	Standard	GENERIC	Y	Y
8	Y	N	NEC	Standard	N/A	N/A	N/A
9	Y	N	Custom	Custom	N/A	N/A	N/A
10	N	N/A	N/A	N/A	N/A	N	N/A
11	Y	N	NEC	N/A	N/A	N	N/A
12	Y	Y	NEC	Standard	N/A	Y	Y
13	Y	N	N/A	N/A	N/A	N/A	N/A
14	Y	N	Custom	Standard	Generic	N	N
15	Y	N	NEC	Custom	Generic	N/A	N/A
16	N	Y	NEC	Custom	IT-IS	N	N/A
17	N	Y	NEC	Custom	IT-IS	N	N/A
18	Y	N	NEC	N/A	N/A	N/A	N/A
19	N	N	N/A	N/A	N/A	N/A	N/A
20	Y	Y	Custom	Standard	Generic	Y	Y
21	Y	N	Custom	Standard	IT-IS	N	N/A
22	Y	N	NEC	Standard	Generic	N/A	N/A
23	Y	N	NEC	Standard	Generic	N/A	N/A
24	Y	N	NEC	Custom	N/A	N/A	N/A

Question 13

Inadequate or non-functional change control process							
	Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA
1	Y	N	Custom	Standard	IT-IS	N	N/A
2	Y	N	Custom	Custom	Generic	N/A	N/A
3	Y	Y	N/A	Custom	IT-IS	Y	Y
4	Y	N	NEC	Standard	Generic	N/A	N/A
5	Y	Y	NEC	Standard	N/A	N	N/A
6	N	N	Custom	N/A	N/A	N/A	N/A
7	Y	Y	NEC	Standard	IT-IS	Y	N
8	Y	N	NEC	Standard	N/A	N/A	N/A
9	Y	N	Custom	Custom	N/A	N/A	N/A
10	N	Y	Custom	Custom	IT-IS	N	N/A
11	Y	N	NEC	N/A	N/A	N	N/A
12	Y	N	NEC	Standard	Generic	N/A	N/A
13	Y	Y	NEC	Standard	Generic	N	N/A
14	Y	N	Custom	Standard	Generic	N/A	N
15	Y	N	NEC	Custom	Generic	N/A	N/A
16	N	N	NEC	N/A	N/A	N/A	N/A
17	Y	N	NEC	Custom	IT-IS	N	N/A
18	Y	Y	NEC	Custom	IT-IS	Y	Y
19	N	N/A	N/A	N/A	N/A	N/A	N/A
20	N	Y	Custom	Standard	IT-IS	Y	Y
21	Y	N	Custom	Custom	IT-IS	N	N/A
22	N	N	NEC	Standard	Generic	N/A	N/A
23	N	Y	NEC	Standard	Generic	N/A	N/A
24	Y	N	NEC	Custom	N/A	N/A	N/A

Question 14

Not well defined or lack of defined deliverable and associated deliverable dates							
	Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA
1	N	N	Custom	Standard	Generic	N	N/A
2	Y	N	Custom	Custom	IT-IS	N/A	N/A
3	Y	Y	N/A	Custom	IT-IS	Y	N
4	Y	N	NEC	Standard	Generic	N/A	N/A
5	Y	Y	NEC	Standard	Generic	N	N/A
6	N	N	Custom	N/A	N/A	N/A	N/A
7	Y	N	NEC	N/A	N/A	N/A	N/A
8	Y	N	NEC	Standard	N/A	N/A	N/A
9	Y	N	Custom	Custom	N/A	N/A	N/A
10	N	Y	Custom	Custom	IT-IS	N	N/A
11	Y	Y	NEC	Custom	IT-IS	N	N/A
12	Y	Y	NEC	Standard	Generic	Y	Y
13	N	Y	NEC	Standard	Generic	N	N/A
14	Y	N	Custom	Standard	Generic	N	N/A
15	Y	Y	NEC	Custom	Generic	Y	Y
16	N	N	NEC	N/A	N/A	N/A	N/A
17	Y	Y	NEC	Custom	IT-IS	N	N/A
18	Y	Y	NEC	Custom	IT-IS	Y	Y
19	N	N/A	N/A	N/A	N/A	N/A	N/A
20	Y	Y	Custom	Custom	IT-IS	Y	Y
21	Y	Y	Custom	Standard	IT-IS	Y	Y
22	N	Y	NEC	Standard	Generic	Y	Y
23	Y	Y	NEC	Standard	Generic	N	N
24	Y	Y	NEC	Custom	IT-IS	Y	N

Question 15

Criteria defining project success inadequate or undefined							
	Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA
1	N	N	Custom	Standard	Generic	N	N/A
2	Y	N	Custom	Custom	IT-IS	N/A	N/A
3	Y	Y	N/A	Custom	IT-IS	Y	N
4	Y	N	NEC	Standard	Generic	N/A	N/A
5	Y	Y	Custom	Standard	N/A	N	N/A
6	Y	N	Custom	N/A	N/A	N/A	N/A
7	Y	N	NEC	N/A	N/A	N/A	N/A
8	Y	N	NEC	Standard	N/A	N/A	N/A
9	Y	N	Custom	Custom	N/A	N/A	N/A
10	Y	N	Custom	Custom	IT-IS	N	N/A
11	Y	N	NEC	N/A	N/A	N	N/A
12	Y	N	NEC	Standard	Generic	N/A	N/A
13	Y	N	NEC	Standard	Generic	N	N/A
14	Y	N	Custom	Standard	Generic	N	N
15	Y	N	NEC	Custom	Generic	N/A	N/A
16	N	Y	NEC	Custom	IT-IS	N	N
17	Y	N	NEC	Custom	IT-IS	N	N/A
18	Y	N	NEC	N/A	N/A	N/A	N/A
19	Y	N	N/A	N/A	N/A	N/A	N/A
20	N	Y	Custom	Custom	IT-IS	Y	Y
21	Y	Y	Custom	Standard	Generic	N	N/A
22	Y	N	NEC	Standard	Generic	N/A	N/A
23	N	Y	NEC	Standard	Generic	N	N
24	Y	Y	NEC	Custom	Generic	N	N/A

Question 16

No business case for the project							
	Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA
1	N	N	Custom	Standard	Generic	N	N/A
2	Y	N	Custom	Standard	IT-IS	N/A	N/A
3	N	Y	N/A	Custom	IT-IS	N/A	N/A
4	Y	N	NEC	Standard	Generic	N/A	N/A
5	Y	Y	Custom	Custom	IT-IS	N	N/A
6	N	N	Custom	N/A	N/A	N/A	N/A
7	N	N	NEC	N/A	N/A	N/A	N/A
8	Y	N	NEC	Standard	N/A	N/A	N/A
9	N	Y	Custom	Custom	N/A	N/A	N/A
10	N	N/A	N/A	N/A	N/A	N	N/A
11	Y	N	NEC	N/A	N/A	N	N/A
12	Y	N	NEC	Standard	Generic	N/A	N/A
13	N	N	N/A	N/A	N/A	N/A	N/A
14	Y	N	Custom	Standard	Generic	N	N/A
15	N	N	NEC	Custom	Generic	N/A	N/A
16	N	N/A	NEC	N/A	N/A	N/A	N/A
17	Y	N	NEC	Custom	IT-IS	N	N/A
18	N	N	N/A	N/A	N/A	N/A	N/A
19	N	N	N/A	N/A	N/A	N/A	N/A
20	N	N	N/A	N/A	N/A	N/A	N/A
21	N	N	Custom	Standard	IT-IS	N	N/A
22	N	N	NEC	Standard	Generic	N/A	N/A
23	N	N	NEC	Standard	Generic	N	N/A
24	N	Y	NEC	Custom	IT-IS	N/A	N/A

Question 17

No project status tracking or progress reporting							
	Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA
1	N	N	Custom	Standard	Generic	N	N/A
2	Y	N	Custom	Standard	Generic	N	N/A
3	N	Y	N/A	Custom	IT-IS	N/A	N/A
4	Y	N	NEC	Standard	GENERIC	N/A	N/A
5	N	Y	N/A	N/A	N/A	N/A	N/A
6	N	N	Custom	N/A	N/A	N/A	N/A
7	N	Y	NEC	Standard	Generic	Y	N
8	Y	Y	NEC	Standard	Generic	Y	Y
9	Y	Y	Custom	Custom	IT-IS	Y	Y
10	N	Y	Custom	Custom	IT-IS	N	N/A
11	Y	N	NEC	N/A	N/A	N	N/A
12	Y	N	NEC	Standard	Generic	N/A	N/A
13	N	Y	NEC	Standard	Generic	N	N/A
14	Y	N	Custom	Standard	Generic	Y	Y
15	N	N	NEC	Custom	Generic	N/A	N/A
16	N	Y	NEC	Custom	IT-IS	N	N/A
17	N	Y	NEC	Custom	IT-IS	N	N/A
18	N	Y	NEC	Custom	IT-IS	N	N/A
19	N	N/A	N/A	N/A	N/A	N/A	N/A
20	N	Y	Custom	Standard	IT-IS	N	N/A
21	Y	N	Custom	Standard	Generic	N	N/A
22	N	N	NEC	Standard	Generic	N/A	N/A
23	N	Y	NEC	Standard	Generic	N	N/A
24	N	Y	NEC	Custom	IT-IS	N/A	N/A

Question 18

Risk management, analysis and tracking not in place or inadequate							
	Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA
1	N	N	Custom	Standard	IT-IS	N	N/A
2	Y	N	Custom	Standard	Generic	N/A	N/A
3	N	Y	N/A	Custom	IT-IS	N/A	N/A
4	Y	N	NEC	Standard	Generic	N/A	N/A
5	Y	Y	Custom	Standard	Generic	N	N/A
6	Y	Y	Custom	Custom	IT-IS	Y	Y
7	Y	N	NEC	N/A	N/A	N/A	N/A
8	Y	N	NEC	Standard	Generic	Y	Y
9	Y	N	Custom	Custom	IT-IS	N/A	N/A
10	N	Y	Custom	Custom	IT-IS	Y	Y
11	Y	N	NEC	N/A	N/A	N	N/A
12	Y	N	NEC	Standard	Generic	N/A	N/A
13	Y	Y	NEC	Standard	Generic	N	N/A
14	Y	N	Custom	Standard	Generic	Y	Y
15	Y	N	NEC	Custom	Generic	N/A	N/A
16	N	Y	NEC	Custom	IT-IS	N	N/A
17	Y	Y	NEC	Custom	IT-IS	N	N/A
18	Y	Y	NEC	Custom	IT-IS	Y	Y
19	N	Y	NEC	Standard	Generic	Y	Y
20	N	Y	Custom	Standard	Generic	N	N/A
21	Y	N	Custom	Standard	Generic	N	N/A
22	Y	N	NEC	Standard	Generic	N/A	N/A
23	Y	Y	NEC	Standard	Generic	N	N/A
24	N	N	NEC	Custom	N/A	N/A	N/A

Question 19

Delivery deadline not aligned with project schedule or project schedule calculated based on delivery deadline and not effort required							
	Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA
1	N	N	Custom	Standard	Generic	N	N/A
2	Y	N	Custom	Standard	Generic	N/A	N/A
3	Y	Y	N/A	Custom	IT-IS	Y	N
4	y	N	NEC	Standard	Generic	N/A	N/A
5	N	Y	N/A	N/A	N/A	N/A	N/A
6	Y	Y	Custom	Custom	IT-IS	Y	N
7	Y	N	N/A	N/A	N/A	N/A	N/A
8	Y	Y	NEC	Standard	Generic	y	y
9	Y	N	Custom	Custom	IT-IS	N/A	N/A
10	Y	N	Custom	Custom	IT-IS	N	N/A
11	Y	Y	NEC	Custom	IT-IS	N	N/A
12	Y	Y	NEC	Standard	Generic	y	y
13	Y	Y	NEC	Standard	Generic	N	N/A
14	Y	N	Custom	Standard	Generic	Y	N
15	Y	N	NEC	Custom	Generic	N/A	N/A
16	N	N/A	NEC	N/A	N/A	N/A	N/A
17	Y	N	NEC	Custom	IT-IS	N	N/A
18	Y	Y	NEC	Custom	IT-IS	Y	Y
19	Y	N	N/A	N/A	N/A	N/A	N/A
20	N	Y	Custom	Standard	Generic	N	N/A
21	Y	N	Custom	Standard	Generic	Y	Y
22	Y	N	NEC	Standard	Generic	N/A	N/A
23	Y	Y	NEC	Standard	Generic	N/A	N/A
24	Y	Y	NEC	Custom	Generic	Y	N

Question 20

Management of project delays, revision of project based on delays encountered							
	Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA
1	Y	N	Custom	Standard	Generic	N	N/A
2	Y	Y	Custom	Standard	IT-IS	N	N/A
3	Y	Y	N/A	Custom	IT-IS	Y	Y
4	y	N	NEC	Standard	Generic	N/A	N/A
5	Y	Y	NEC	Standard	Generic	Y	N
6	Y	Y	Custom	Custom	IT-IS	Y	Y
7	Y	Y	NEC	Custom	IT-IS	Y	Y
8	Y	Y	NEC	Standard	Generic	Y	Y
9	Y	N	Custom	Custom	IT-IS	N/A	N/A
10	Y	Y	Custom	Custom	IT-IS	Y	Y
11	Y	N	NEC	N/A	N/A	N	N/A
12	Y	n	NEC	Standard	Generic	N/A	N/A
13	Y	Y	NEC	Standard	Generic	N	N/A
14	Y	N	Custom	Standard	Generic	Y	Y
15	Y	N	NEC	Custom	Generic	N/A	N/A
16	Y	Y	NEC	Custom	IT-IS	Y	Y
17	Y	Y	NEC	Custom	IT-IS	N	N/A
18	Y	Y	NEC	Custom	IT-IS	Y	Y
19	Y	Y	NEC	Standard	Generic	Y	Y
20	Y	Y	Custom	Standard	Generic	Y	Y
21	Y	Y	Custom	Custom	IT-IS	Y	N
22	Y	N	NEC	Standard	Generic	N/A	N/A
23	Y	Y	NEC	Standard	Generic	Y	Y
24	Y	Y	NEC	Custom	Generic	Y	Y

Question 21

Documentation on planning and estimation lacking or inadequate							
	Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA
1	Y	N	Custom	Standard	Generic	N	N/A
2	Y	N	Custom	Standard	Generic	N	N/A
3	N	Y	N/A	Custom	IT-IS	N/A	N/A
4	y	N	NEC	Standard	Generic	N/A	N/A
5	N	Y	N/A	N/A	N/A	N/A	N/A
6	N	N	Custom	N/A	N/A	N/A	N/A
7	Y	Y	NEC	Standard	Generic	N	N/A
8	Y	N	NEC	Standard	Generic	N/A	N/A
9	Y	N	Custom	Custom	IT-IS	N/A	N/A
10	Y	N	Custom	Custom	IT-IS	N	N/A
11	Y	N	NEC	N/A	N/A	N	N/A
12	Y	n	NEC	Standard	N/A	N/A	N/A
13	Y	N	N/A	N/A	N/A	N/A	N/A
14	Y	N	Custom	Standard	Generic	Y	N
15	Y	N	NEC	Custom	Generic	N/A	N/A
16	N	Y	NEC	Custom	IT-IS	N	N/A
17	Y	Y	NEC	Custom	IT-IS	N	N/A
18	Y	Y	NEC	Custom	IT-IS	Y	Y
19	N	N/A	N/A	N/A	N/A	N/A	N/A
20	Y	Y	Custom	Custom	Generic	Y	Y
21	Y	N	Custom	Standard	Generic	N	N/A
22	Y	N	NEC	Standard	Generic	N/A	N/A
23	N	N	NEC	Standard	Generic	N/A	N/A
24	Y	N	NEC	Custom	Generic	N/A	N/A

Question 22

Significant changes to the project, including Scope schedule or goals							
	Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA
1	Y	Y	NEC	Standard	IT-IS	N	N/A
2	Y	N	Custom	Standard	Generic	Y	N
3	Y	Y	Custom	Custom	IT-IS	Y	Y
4	y	Y	NEC	Standard	Generic	N/A	N/A
5	Y	Y	Custom	Standard	Generic	Y	Y
6	Y	Y	Custom	Custom	IT-IS	Y	Y
7	Y	Y	NEC	Custom	Generic	Y	N
8	Y	Y	NEC	Standard	Generic	Y	Y
9	Y	Y	Custom	Custom	IT-IS	Y	Y
10	Y	Y	Custom	Custom	IT-IS	Y	Y
11	Y	N	NEC	N/A	N/A	N	N/A
12	Y	N	NEC	Standard	Generic	N/A	N/A
13	Y	Y	NEC	Standard	Generic	N	N/A
14	Y	N	Custom	Standard	Generic	Y	Y
15	N	N	NEC	Custom	Generic	N/A	N/A
16	Y	Y	NEC	Custom	IT-IS	Y	Y
17	Y	Y	NEC	Custom	IT-IS	N	N/A
18	Y	Y	NEC	Custom	IT-IS	Y	Y
19	N	N/A	N/A	N/A	N/A	N/A	N/A
20	Y	Y	Custom	Custom	Generic	Y	Y
21	Y	Y	Custom	Standard	Generic	Y	N
22	N	Y	NEC	Standard	Generic	N/A	N/A
23	Y	Y	NEC	Standard	Generic	Y	Y
24	Y	Y	NEC	Custom	Generic	Y	Y

Question 23

Roles and responsibilities of team members are not clearly defined							
	Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA
1	N	N	Custom	Standard	Generic	N	N/A
2	Y	N	Custom	Standard	Generic	Y	N
3	Y	Y	N/A	Custom	IT-IS	Y	Y
4	Y	N	NEC	Standard	Generic	N/A	N/A
5	Y	Y	Custom	Standard	Generic	N	N/A
6	Y	N	Custom	N/A	N/A	N/A	N/A
7	Y	Y	NEC	Custom	Generic	Y	Y
8	Y	N	NEC	Standard	Generic	N/A	N/A
9	N	Y	Custom	Custom	IT-IS	N	N/A
10	Y	Y	Custom	Custom	IT-IS	Y	Y
11	Y	N	NEC	N/A	N/A	N	N/A
12	Y	N	NEC	Standard	Generic	N/A	N/A
13	Y	Y	NEC	Standard	Generic	N	N/A
14	Y	N	Custom	Standard	Generic	Y	N
15	Y	N	NEC	Custom	Generic	N/A	N/A
16	N	Y	NEC	Custom	IT-IS	N	N/A
17	Y	N	NEC	Custom	IT-IS	N	N/A
18	Y	Y	NEC	Custom	IT-IS	Y	Y
19	N	N/A	N/A	N/A	N/A	N/A	N/A
20	Y	Y	Custom	Custom	IT-IS	Y	Y
21	Y	Y	Custom	Custom	IT-IS	N	N/A
22	N	N	NEC	Standard	Generic	N/A	N/A
23	N	Y	NEC	Standard	Generic	N	N
24	Y	N	NEC	Custom	N/A	N/A	N/A

Question 24

Project communications lacking or not defined, including planning and resources							
	Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA
1	N	N	Custom	Standard	Generic	N	N/A
2	Y	N	Custom	Standard	Generic	N	N/A
3	Y	Y	N/A	Custom	IT-IS	Y	Y
4	Y	N	NEC	Standard	Generic	N/A	N/A
5	Y	Y	Custom	Standard	Generic	Y	N
6	Y	N	Custom	N/A	N/A	N/A	N/A
7	Y	N	NEC	N/A	N/A	N/A	N/A
8	Y	N	NEC	Standard	Generic	N/A	N/A
9	Y	N	Custom	Custom	IT-IS	N	N/A
10	N	Y	Custom	Custom	IT-IS	N	N/A
11	Y	N	NEC	N/A	N/A	N	N/A
12	Y	N	NEC	Standard	Generic	N/A	N/A
13	Y	Y	NEC	Standard	Generic	N	N/A
14	Y	N	Custom	Standard	Generic	Y	N
15	Y	N	NEC	Custom	Generic	N/A	N/A
16	N	Y	NEC	Custom	IT-IS	N	N/A
17	Y	Y	NEC	Custom	IT-IS	N	N/A
18	N	Y	NEC	Custom	IT-IS	N/A	N/A
19	N	N/A	N/A	N/A	N/A	N/A	N/A
20	Y	Y	Custom	Custom	Generic	Y	Y
21	Y	N	Custom	Custom	Generic	N	N/A
22	Y	N	NEC	Standard	Generic	N/A	N/A
23	Y	Y	NEC	Standard	Generic	Y	Y
24	Y	N	NEC	Custom	N/A	N/A	N/A

Question 25

Project management methodology not properly implemented or not being used at all							
	Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA
1	N	N	Custom	Standard	IT-IS	N	N/A
2	Y	N	Custom	Standard	Generic	N	N/A
3	N	Y	N/A	Custom	IT-IS	N/A	N/A
4	Y	N	NEC	Standard	Generic	N/A	N/A
5	Y	Y	Custom	Standard	Generic	N	N/A
6	N	N	Custom	N/A	N/A	N/A	N/A
7	Y	Y	NEC	Standard	Generic	Y	N
8	Y	N	NEC	Standard	Generic	N/A	N/A
9	Y	N	Custom	Custom	IT-IS	N	N/A
10	Y	Y	Custom	Custom	IT-IS	N	N/A
11	Y	N	NEC	N/A	N/A	N	N/A
12	Y	N	NEC	Standard	Generic	N/A	N/A
13	N	Y	NEC	Standard	Generic	N	N/A
14	Y	N	Custom	Standard	Generic	Y	Y
15	Y	N	NEC	Custom	Generic	N/A	N/A
16	N	Y	NEC	Standard	IT-IS	N	N/A
17	Y	N	NEC	Custom	IT-IS	N	N/A
18	Y	Y	NEC	Custom	IT-IS	Y	Y
19	Y	Y	NEC	Standard	Generic	Y	Y
20	N	Y	Custom	Standard	Generic	Y	Y
21	Y	N	Custom	Standard	Generic	N	N/A
22	Y	N	NEC	Standard	Generic	N/A	N/A
23	N	Y	NEC	Standard	IT-IS	N	N/A
24	N	Y	NEC	Custom	Generic	N/A	N/A

Question 26

Project charter not created or incomplete							
	Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA
1	N	N	Custom	Standard	Generic	N	N/A
2	Y	N	Custom	Standard	IT-IS	N	N/A
3	N	N	N/A	Custom	IT-IS	N/A	N/A
4	Y	N	NEC	Standard	GENERIC	N/A	N/A
5	Y	Y	Custom	Standard	GENERIC	N	N/A
6	N	N	Custom	N/A	N/A	N/A	N/A
7	Y	Y	NEC	Standard	GENERIC	Y	Y
8	Y	N	NEC	Standard	GENERIC	N/A	N/A
9	Y	N	Custom	Custom	IT-IS	N	N/A
10	Y	Y	Custom	Custom	IT-IS	N	N
11	Y	N	NEC	N/A	N/A	N	N/A
12	Y	N	NEC	Standard	Generic	N/A	N/A
13	N	N	N/A	N/A	N/A	N/A	N/A
14	Y	N	Custom	Standard	Generic	Y	N
15	Y	N	NEC	Custom	Generic	N/A	N/A
16	N	N	NEC	N/A	N/A	N/A	N/A
17	Y	N	NEC	Custom	IT-IS	N	N/A
18	Y	Y	NEC	Custom	IT-IS	N	N/A
19	N	N/A	N/A	N/A	N/A	N/A	N/A
20	N/A	N/A	N/A	N/A	N/A	N/A	N/A
21	Y	Y	Custom	Standard	Generic	N	N/A
22	Y	N	NEC	Standard	Generic	N/A	N/A
23	N/A	N	N/A	N/A	N/A	N/A	N/A
24	N	N	NEC	Custom	N/A	N/A	N/A

Question 27

Key project deliverables are outside the locus of control of the project team							
	Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA
1	N	N	Custom	Standard	Generic	N	N/A
2	Y	N	Custom	Standard	IT-IS	N	N/A
3	Y	Y	N/A	Custom	IT-IS	N	N/A
4	y	N	NEC	Standard	Generic	N/A	N/A
5	Y	Y	Custom	Standard	N/A	N/A	N/A
6	Y	Y	Custom	Custom	IT-IS	Y	N
7	y	n	NEC	N/A	N/A	N/A	N/A
8	Y	N	NEC	Standard	Generic	N/A	N/A
9	N	N	Custom	Custom	IT-IS	N	N/A
10	N	N/A	N/A	N/A	N/A	N	N/A
11	Y	N	NEC	N/A	N/A	N	N/A
12	Y	N	NEC	Standard	Generic	N/A	N/A
13	Y	Y	NEC	Standard	Generic	N	N/A
14	Y	N	Custom	Standard	Generic	Y	N
15	n	N	NEC	Custom	Generic	N/A	N/A
16	N	Y	NEC	Custom	IT-IS	N	N/A
17	Y	N	NEC	Custom	IT-IS	N	N/A
18	Y	Y	NEC	Custom	IT-IS	Y	Y
19	N	N/A	N/A	N/A	N/A	N	N/A
20	N	Y	Custom	Standard	IT-IS	N	N/A
21	Y	Y	Custom	Standard	IT-IS	Y	N
22	Y	N	NEC	Standard	Generic	N/A	N/A
23	Y	Y	NEC	Standard	Generic	N	N/A
24	Y	Y	NEC	Custom	Generic	Y	N

Question 28

Commitment and belief of project team members in meeting the project scope within schedule is low							
	Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA
1	N	N	Custom	Standard	Generic	N	N/A
2	Y	N	Custom	Standard	IT-IS	N	N/A
3	Y	Y	N/A	Custom	IT-IS	N	N/A
4	y	N	NEC	Standard	Generic	N/A	N/A
5	Y	Y	Custom	Standard	N/A	N/A	N/A
6	N	N	Custom	N/A	N/A	N/A	N/A
7	Y	N	NEC	N/A	N/A	N/A	N/A
8	Y	N	NEC	Standard	Generic	N/A	N/A
9	Y	N	Custom	Custom	IT-IS	N	N/A
10	Y	N	Custom	Custom	IT-IS	N	N/A
11	Y	N	NEC	N/A	N/A	N	N/A
12	Y	N	NEC	Standard	N/A	N/A	N/A
13	Y	N	N/A	N/A	N/A	N/A	N/A
14	Y	N	Custom	Standard	Generic	Y	N
15	Y	N	NEC	Custom	Generic	N/A	N/A
16	Y	N	NEC	N/A	N/A	N/A	N/A
17	Y	N	NEC	Custom	IT-IS	N	N/A
18	N	N	N/A	N/A	N/A	N/A	N/A
19	Y	N	N/A	N/A	N/A	N/A	N/A
20	Y	Y	Custom	Custom	Generic	Y	Y
21	Y	N	Custom	Standard	IT-IS	N	N/A
22	Y	N	NEC	Standard	Generic	N/A	N/A
23	Y	N	NEC	Standard	Generic	N/A	N/A
24	Y	N	NEC	Custom	N/A	N/A	N/A

Question 29

Key stakeholders are unavailable or only have limited availability for review sessions of project							
	Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA
1	Y	N	Custom	Standard	Generic	N	N/A
2	Y	N	Custom	Standard	IT-IS	N	N/A
3	N	Y	N/A	Custom	IT-IS	N	N/A
4	Y	N	NEC	Standard	Generic	N/A	N/A
5	Y	Y	N/A	Standard	N/A	N/A	N/A
6	Y	Y	Custom	Custom	IT-IS	Y	N
7	Y	Y	NEC	Standard	Generic	N	N
8	Y	N	NEC	Standard	Generic	N/A	N/A
9	Y	N	Custom	Custom	IT-IS	N	N/A
10	Y	Y	Custom	Custom	IT-IS	N	N
11	Y	N	NEC	N/A	N/A	N	N/A
12	Y	N	NEC	Standard	Generic	N/A	N/A
13	Y	Y	NEC	Standard	Generic	N	N/A
14	Y	N	Custom	Standard	Generic	Y	N
15	Y	N	NEC	Custom	Generic	N/A	N/A
16	N	Y	NEC	Custom	IT-IS	N	N/A
17	Y	N	NEC	Custom	IT-IS	N	N/A
18	N	N	N/A	N/A	N/A	N/A	N/A
19	N	N/A	N/A	N/A	N/A	N/A	N/A
20	Y	Y	Custom	Standard	Generic	Y	Y
21	Y	N	Custom	Custom	IT-IS	Y	N
22	Y	N	NEC	Standard	Generic	N/A	N/A
23	Y	N	NEC	Standard	Generic	N/A	N/A
24	Y	N	NEC	Custom	N/A	N/A	N/A

Question 30

Skills, knowledge or experience of resources on project team are lacking							
	Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA
1	N	N	Custom	Standard	Generic	N	N/A
2	Y	N	Custom	Standard	IT-IS	N	N/A
3	N	Y	N/A	Custom	IT-IS	N	N/A
4	y	N	NEC	Standard	Generic	N/A	N/A
5	Y	Y	Custom	Standard	N/A	N/A	N/A
6	Y	N	Custom	N/A	N/A	N/A	N/A
7	Y	Y	NEC	Standard	Generic	Y	N
8	Y	Y	NEC	Standard	Generic	Y	Y
9	Y	Y	Custom	Custom	IT-IS	Y	Y
10	Y	Y	Custom	Custom	IT-IS	N	N
11	Y	N	NEC	N/A	N/A	N	N/A
12	Y	N	NEC	Standard	Generic	N/A	N/A
13	Y	N	N/A	N/A	N/A	N/A	N/A
14	Y	N	Custom	Standard	Generic	N/A	N/A
15	Y	N	NEC	Custom	Generic	N	N
16	N	Y	NEC	Custom	IT-IS	N	N/A
17	Y	Y	NEC	Custom	IT-IS	N	N/A
18	Y	Y	NEC	Custom	IT-IS	Y	Y
19	Y	Y	NEC	Standard	Generic	Y	Y
20	Y	Y	Custom	Standard	IT-IS	Y	Y
21	Y	Y	Custom	Custom	IT-IS	Y	N
22	Y	N	NEC	Standard	Generic	N/A	N/A
23	Y	N	NEC	Standard	Generic	N	N/A
24	Y	Y	NEC	Custom	Generic	y	Y

Question 31

Project resources are only part time assigned or become fully assigned to another project which is deemed of higher importance							
	Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA
1	Y	N	Custom	Standard	Generic	N	N/A
2	Y	N	Custom	Standard	IT-IS	N	N/A
3	Y	Y	N/A	Custom	IT-IS	Y	Y
4	Y	N	NEC	Standard	Generic	N/A	N/A
5	Y	Y	Nec	Standard	Generic	N	N/A
6	Y	N	Custom	N/A	N/A	N/A	N/A
7	Y	Y	NEC	Standard	Generic	Y	N
8	Y	N	NEC	Standard	Generic	N/A	N/A
9	N	N	Custom	Custom	IT-IS	N	N/A
10	Y	Y	Custom	Custom	IT-IS	N	N
11	N	N	NEC	N/A	N/A	N	N/A
12	Y	N	NEC	Standard	Generic	N/A	N/A
13	Y	N	N/A	N/A	N/A	N/A	N/A
14	Y	N	Custom	Standard	Generic	Y	N
15	Y	N	NEC	Custom	Generic	Y	Y
16	N	Y	NEC	Custom	IT-IS	N	N/A
17	Y	Y	NEC	Custom	IT-IS	N	N/A
18	Y	Y	NEC	Custom	IT-IS	Y	N
19	Y	Y	NEC	Standard	Generic	Y	Y
20	Y	Y	Custom	Standard	Generic	Y	Y
21	Y	N	Custom	Custom	IT-IS	Y	N
22	N	N/A	NEC	Standard	Generic	N/A	N/A
23	Y	N	NEC	Standard	Generic	N/A	N/A
24	Y	N	NEC	Custom	N/A	N/A	N/A

Question 32

Over scheduling of subject matter experts							
	Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA
1	Y	N	Custom	Standard	IT-IS	N	N/A
2	Y	N	Custom	Standard	IT-IS	N	N/A
3	Y	Y	N/A	Custom	IT-IS	Y	Y
4	Y	N	NEC	Standard	Generic	N/A	N/A
5	Y	Y	Custom	Standard	N/A	N/A	N/A
6	Y	N	Custom	N/A	N/A	N/A	N/A
7	N	N	N/A	N/A	N/A	N/A	N/A
8	Y	N	NEC	Standard	Generic	N/A	N/A
9	Y	N	Custom	Custom	IT-IS	N	N/A
10	Y	N	Custom	Custom	IT-IS	N	N
11	Y	N	NEC	N/A	N/A	N	N/A
12	Y	N	NEC	Standard	Generic	N/A	N/A
13	Y	N	N/A	N/A	N/A	N/A	N/A
14	Y	N	Custom	Standard	Generic	Y	N
15	Y	N	NEC	Custom	Generic	N	N
16	Y	N	NEC	N/A	N/A	N/A	N/A
17	Y	N	NEC	Custom	IT-IS	N	N/A
18	Y	N	N/A	N/A	N/A	N/A	N/A
19	N	N/A	N/A	N/A	N/A	N/A	N/A
20	Y	Y	Custom	Standard	Generic	Y	Y
21	Y	Y	Custom	Custom	IT-IS	Y	N
22	Y	N	NEC	Standard	Generic	N/A	N/A
23	Y	N	NEC	Standard	Generic	N/A	N/A
24	Y	N	NEC	Custom	N/A	N/A	N/A

Question 33

Timely review and sign off on decisions, deliverables and documentation							
Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	
1	Y	N	Custom	Standard	Generic	N	N/A
2	Y	N	Custom	Standard	IT-IS	N	N/A
3	Y	Y	N/A	Custom	IT-IS	Y	N
4	Y	Y	NEC	Standard	Generic	N/A	N/A
5	Y	Y	Custom	Standard	Generic	Y	N
6	Y	Y	Custom	Custom	IT-IS	Y	Y
7	Y	Y	NEC	Standard	Generic	Y	Y
8	Y	Y	NEC	Standard	Generic	Y	Y
9	Y	Y	Custom	Custom	IT-IS	N	N
10	Y	Y	Custom	Custom	IT-IS	Y	N
11	Y	N	NEC	N/A	N/A	N	N/A
12	Y	N	NEC	Standard	Generic	N/A	N/A
13	Y	Y	NEC	Standard	Generic	N	N/A
14	Y	N	Custom	Standard	Generic	Y	N
15	N	N	NEC	Custom	Generic	N/A	N/A
16	Y	Y	NEC	Custom	IT-IS	Y	Y
17	Y	N	NEC	Custom	IT-IS	N	N/A
18	Y	Y	NEC	Custom	IT-IS	Y	Y
19	Y	N	N/A	N/A	N/A	N/A	N/A
20	N	Y	Custom	Custom	Generic	Y	Y
21	Y	Y	Custom	Custom	Generic	Y	Y
22	Y	N	NEC	Standard	Generic	N/A	N/A
23	Y	Y	NEC	Standard	Generic	N	N/A
24	Y	Y	NEC	Custom	Generic	N	N/A

Question 34

Willingness of users (end users of the system) to be involved in and co-operate with the project							
Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	
1	Y	N	Custom	Standard	Generic	N	N/A
2	Y	N	Custom	Standard	IT-IS	N	N/A
3	Y	Y	N/A	Custom	IT-IS	N	N/A
4	Y	N	NEC	Standard	Generic	N/A	N/A
5	Y	Y	Custom	Standard	N/A	N/A	N/A
6	Y	N	Custom	N/A	N/A	N/A	N/A
7	Y	N	NEC	N/A	N/A	N/A	N/A
8	Y	N	NEC	Standard	Generic	N/A	N/A
9	N	N	Custom	Custom	IT-IS	N	N/A
10	Y	Y	Custom	Custom	IT-IS	Y	N
11	Y	N	NEC	N/A	N/A	N	N/A
12	Y	N	NEC	Standard	Generic	N/A	N/A
13	Y	N	N/A	N/A	N/A	N/A	N/A
14	Y	N	Custom	Standard	Generic	N	N/A
15	Y	N	NEC	Custom	Generic	N/A	N/A
16	N	N	NEC	N/A	N/A	N/A	N/A
17	Y	N	NEC	Custom	IT-IS	N	N/A
18	N	N	N/A	N/A	N/A	N/A	N/A
19	Y	N	N/A	N/A	N/A	N/A	N/A
20	Y	Y	Custom	Standard	Generic	Y	Y
21	Y	Y	Custom	Custom	IT-IS	N	N/A
22	Y	N	NEC	Standard	Generic	N/A	N/A
23	N	N	NEC	Standard	Generic	N/A	N/A
24	Y	N	NEC	Custom	N/A	N/A	N/A

Question 35

Limited user involvement due to capabilities in new system being vastly different from existing systems							
Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	
1	Y	N	Custom	Standard	IT-IS	N	N/A
2	Y	N	Custom	Standard	IT-IS	N	N/A
3	Y	Y	N/A	Custom	IT-IS	N	N/A
4	Y	N	NEC	Standard	Generic	N/A	N/A
5	Y	Y	Custom	Standard	Generic	N	N/A
6	Y	N	Custom	N/A	N/A	N/A	N/A
7	Y	N	NEC	N/A	N/A	N/A	N/A
8	Y	N	NEC	Standard	Generic	N/A	N/A
9	Y	Y	Custom	Custom	IT-IS	Y	Y
10	Y	Y	Custom	Custom	IT-IS	Y	Y
11	Y	Y	NEC	Custom	IT-IS	N	N/A
12	Y	N	NEC	Standard	Generic	N/A	N/A
13	Y	N	N/A	N/A	N/A	N/A	N/A
14	Y	N	Custom	Standard	Generic	Y	Y
15	Y	N	NEC	Custom	Generic	N/A	N/A
16	N	N	NEC	N/A	N/A	N/A	N/A
17	Y	N	NEC	Custom	IT-IS	N	N/A
18	N	N	N/A	N/A	N/A	N/A	N/A
19	Y	Y	NEC	Standard	Generic	Y	Y
20	Y	Y	Custom	Standard	Generic	Y	Y
21	Y	N	Custom	Standard	IT-IS	N	N/A
22	N	N	NEC	Standard	Generic	N/A	N/A
23	Y	Y	NEC	Standard	Generic	N	N/A
24	Y	N	NEC	Custom	N/A	N/A	N/A

Question 36

Support teams and users perceive new system as a threat							
Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	
1	Y	N	Custom	Standard	Generic	N	N/A
2	N	N	Custom	Standard	IT-IS	N	N
3	Y	N	N/A	Custom	IT-IS	N	N/A
4	Y	N	NEC	Standard	Generic	N/A	N/A
5	Y	Y	Custom	Standard	N/A	N/A	N/A
6	Y	N	Custom	N/A	N/A	N/A	N/A
7	Y	N	NEC	N/A	N/A	N/A	N/A
8	Y	N	NEC	Standard	Generic	N/A	N/A
9	Y	Y	Custom	Custom	IT-IS	N	N/A
10	Y	Y	Custom	Custom	IT-IS	N	N/A
11	Y	N	NEC	N/A	N/A	N	N/A
12	Y	N	NEC	Standard	Generic	N/A	N/A
13	Y	N	N/A	N/A	N/A	N/A	N/A
14	Y	N	Custom	Standard	Generic	Y	N
15	N	N	NEC	Custom	Generic	N/A	N/A
16	Y	N	NEC	N/A	N/A	N/A	N/A
17	Y	N	NEC	Custom	IT-IS	N	N/A
18	N	N	N/A	N/A	N/A	N/A	N/A
19	Y	N	N/A	N/A	N/A	N/A	N/A
20	Y	Y	Custom	Standard	Generic	Y	Y
21	Y	N	Custom	Custom	IT-IS	N	N/A
22	Y	N	NEC	Standard	Generic	N/A	N/A
23	Y	N	N/A	N/A	N/A	N/A	N/A
24	Y	N	NEC	Custom	N/A	N/A	N/A

Question 37

Motivation and maintaining morale of team members throughout a project							
Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	
1	Y	N	Custom	Standard	Generic	N	N/A
2	Y	N	NEC	Standard	Generic	Y	N
3	Y	N	N/A	Custom	IT-IS	N	N/A
4	y	N	NEC	Standard	Generic	N/A	N/A
5	Y	Y	Custom	Standard	N/A	N/A	N/A
6	Y	N	Custom	N/A	N/A	N/A	N/A
7	Y	N	NEC	N/A	N/A	N/A	N/A
8	Y	N	NEC	Standard	Generic	N/A	N/A
9	Y	N	Custom	Custom	IT-IS	N	N/A
10	Y	N	Custom	Custom	IT-IS	N	N
11	Y	N	NEC	N/A	N/A	N	N/A
12	y	n	NEC	Standard	n/a	N/A	N/A
13	Y	N	N/A	N/A	N/A	N/A	N/A
14	Y	N	Custom	Standard	Generic	N	N
15	Y	N	NEC	Custom	Generic	N/A	N/A
16	Y	N	NEC	N/A	N/A	N/A	N/A
17	Y	Y	NEC	Custom	IT-IS	N	N/A
18	N	N	N/A	N/A	N/A	N/A	N/A
19	Y	N	N/A	N/A	N/A	N/A	N/A
20	Y	N	N/A	N/A	N/A	N/A	N/A
21	Y	N	Custom	Standard	Generic	N	N/A
22	Y	N	NEC	Standard	Generic	N/A	N/A
23	Y	N	NEC	Standard	Generic	N/A	N/A
24	Y	N	NEC	Custom	N/A	N/A	N/A

Question 38

Turnover of key project team members through the project lifecycle							
Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	
1	Y	N	Custom	Standard	Generic	N	N/A
2	Y	N	NEC	Standard	Generic	Y	N
3	Y	Y	N/A	Custom	IT-IS	Y	Y
4	y	Y	NEC	Custom	Generic	N/A	N/A
5	Y	Y	Custom	Standard	N/A	N/A	N/A
6	Y	N	Custom	N/A	N/A	N/A	N/A
7	Y	Y	NEC	Standard	Generic	Y	Y
8	Y	Y	NEC	Standard	Generic	Y	Y
9	N	Y	Custom	Custom	IT-IS	Y	Y
10	Y	Y	Custom	Custom	IT-IS	N	N
11	Y	N	NEC	N/A	N/A	N	N/A
12	Y	N	NEC	Standard	Generic	N/A	N/A
13	Y	Y	NEC	Standard	Generic	N	N/A
14	Y	N	Custom	Standard	N/A	Y	N
15	Y	N	NEC	Custom	Generic	N/A	N/A
16	N	N	NEC	N/A	N/A	N/A	N/A
17	Y	Y	NEC	Custom	IT-IS	N	N/A
18	Y	Y	NEC	Custom	IT-IS	N	N/A
19	Y	Y	NEC	Standard	Generic	Y	Y
20	Y	N	Custom	N/A	N/A	N/A	N/A
21	Y	Y	Custom	Custom	IT-IS	N	N/A
22	N	N	NEC	Standard	Generic	N/A	N/A
23	Y	N	NEC	Standard	Generic	N/A	N/A
24	Y	Y	NEC	Custom	Generic	Y	N

Question 39

Implementation of new or latest technology							
Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	
1	N	N	Custom	Standard	IT-IS	N	N/A
2	Y	N	Custom	Standard	IT-IS	N	N
3	Y	Y	N/A	Custom	IT-IS	N	N/A
4	Y	N	NEC	Standard	Generic	N/A	N/A
5	Y	Y	NEC	Standard	N/A	N/A	N/A
6	N	N	Custom	N/A	N/A	N/A	N/A
7	Y	N	NEC	N/A	N/A	N/A	N/A
8	Y	Y	NEC	Standard	Generic	Y	Y
9	Y	N	Custom	Custom	IT-IS	N	N/A
10	Y	N	Custom	Custom	IT-IS	N	N
11	Y	N	NEC	N/A	N/A	N	N/A
12	Y	N	NEC	Standard	Generic	N/A	N/A
13	Y	N	N/A	N/A	N/A	N/A	N/A
14	Y	Y	Custom	Standard	Generic	Y	N
15	Y	N	NEC	Custom	Generic	N/A	N/A
16	Y	N	NEC	N/A	N/A	N/A	N/A
17	Y	Y	NEC	Custom	IT-IS	N	N/A
18	N	Y	NEC	Custom	IT-IS	Y	Y
19	N	N/A	N/A	N/A	N/A	N/A	N/A
20	Y	N	Custom	Standard	Generic	Y	Y
21	Y	N	Custom	Standard	Generic	N	N/A
22	Y	N	NEC	Standard	Generic	N/A	N/A
23	Y	N	NEC	Standard	Generic	N/A	N/A
24	N	N	NEC	Custom	N/A	N/A	N/A

Question 40

Availability and capacity constraints on technical communications infrastructure							
Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	
1	N	N	Custom	Standard	Generic	N	N/A
2	N	N	Custom	Standard	IT-IS	N	N
3	Y	Y	N/A	Custom	IT-IS	Y	Y
4	Y	N	NEC	Standard	Generic	N/A	N/A
5	Y	Y	Custom	Standard	Generic	Y	N
6	Y	Y	Custom	Custom	IT-IS	Y	N
7	Y	N	NEC	N/A	N/A	N/A	N/A
8	Y	N	NEC	Standard	Generic	N/A	N/A
9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10	Y	Y	Custom	Custom	IT-IS	Y	N
11	Y	N	NEC	N/A	N/A	N	N/A
12	Y	N	NEC	Standard	Generic	N/A	N/A
13	Y	N	N/A	N/A	N/A	N/A	N/A
14	Y	N	Custom	Standard	N/A	Y	N
15	N	N	NEC	Custom	Generic	N/A	N/A
16	N	N	NEC	N/A	N/A	N/A	N/A
17	Y	Y	NEC	Custom	IT-IS	N	N/A
18	Y	Y	NEC	Custom	IT-IS	Y	Y
19	N	N/A	N/A	N/A	N/A	N/A	N/A
20	Y	Y	Custom	Standard	Generic	Y	Y
21	Y	Y	Custom	Custom	IT-IS	N	N/A
22	Y	N	NEC	Standard	Generic	N/A	N/A
23	N	N	NEC	Standard	Generic	N/A	N/A
24	Y	Y	NEC	Custom	Generic	N	N/A

Question 41

Technical complexity							
Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	
1	Y	N	Custom	Standard	IT-IS	N	N/A
2	Y	N	Custom	Standard	Generic	Y	N
3	Y	Y	N/A	Custom	IT-IS	N	N/A
4	y	N	NEC	Standard	Generic	N/A	N/A
5	Y	Y	Custom	Standard	N/A	N/A	N/A
6	N	N	Custom	N/A	N/A	N/A	N/A
7	Y	N	NEC	N/A	N/A	N/A	N/A
8	Y	N	NEC	Standard	Generic	N/A	N/A
9	Y	N/A	N/A	N/A	N/A	N/A	N/A
10	Y	N	Custom	Custom	IT-IS	N	N/A
11	Y	N	NEC	N/A	N/A	N	N/A
12	Y	N	NEC	Standard	Generic	N/A	N/A
13	Y	N	N/A	N/A	N/A	N/A	N/A
14	Y	N	Custom	Standard	Generic	Y	N
15	N	N	NEC	Custom	Generic	N/A	N/A
16	Y	N	NEC	N/A	N/A	N/A	N/A
17	Y	Y	NEC	Custom	IT-IS	N	N/A
18	Y	Y	NEC	Custom	IT-IS	Y	N
19	Y	Y	NEC	Standard	Generic	Y	Y
20	Y	N	Custom	Standard	N/A	Y	Y
21	Y	N	Custom	Standard	Generic	N	N/A
22	Y	N	NEC	Standard	Generic	N/A	N/A
23	Y	N	NEC	Standard	Generic	N/A	N/A
24	Y	N	NEC	Custom	N/A	N/A	N/A

Question 42

Goldplating (unrealistic requirements related to the use of the system)							
Have you encountered project risks related to this item? Y/N	Were there contract clauses in place to specifically address this item? Y/N	Was the contract a standard contract or was it a custom contract specific to a project or company? (NEC, FIDIC or Other, if other please specify)	Were the contract clauses standard or were they customised for the project and/or company? Standard/Custom	If clauses were in place, were these generic or specifically related to Information Technology / Systems (IT/IS) projects? Generic/IT-IS/NA	Was it ever required to invoke these clauses? Y/N/NA	If these clauses were invoked, was this action successful in resolving the issues encountered? Y/N/NA	
1	N	N	Custom	Standard	Generic	N	N/A
2	Y	N	Custom	Standard	IT-IS	N	N/A
3	N	Y	N/A	Custom	IT-IS	N	N/A
4	y	N	NEC	Standard	Generic	N/A	N/A
5	N	Y	N/A	N/A	N/A	N/A	N/A
6	Y	N	Custom	N/A	N/A	N/A	N/A
7	Y	N	NEC	N/A	N/A	N/A	N/A
8	Y	N	NEC	Standard	Generic	N/A	N/A
9	N	N/A	N/A	N/A	N/A	N/A	N/A
10	Y	N	Custom	Custom	IT-IS	N	N/A
11	Y	N	NEC	N/A	N/A	N	N/A
12	y	n	NEC	Standard	N/A	N/A	N/A
13	Y	N	N/A	N/A	N/A	N/A	N/A
14	Y	N	Custom	Standard	Generic	Y	N
15	N	N	NEC	Custom	Generic	N/A	N/A
16	N	N	NEC	N/A	N/A	N/A	N/A
17	Y	Y	NEC	Custom	IT-IS	N	N/A
18	Y	Y	NEC	Custom	IT-IS	Y	N
19	N	N/A	N/A	N/A	N/A	N/A	N/A
20	Y	Y	Custom	Custom	Generic	Y	Y
21	Y	N	Custom	Standard	IT-IS	N	N/A
22	Y	N	NEC	Standard	Generic	N/A	N/A
23	Y	N	NEC	Standard	Generic	N/A	N/A
24	Y	N	NEC	Custom	N/A	N/A	N/A

APPENDIX C – COPIES OF INTERNET REFERENCES

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Upcoming Events
 Sept. 25-27, 2013: IT Financial, Procurement & Asset Management Summit
 September 26-27, 2013: ProjectManagement.com Workshop Series: Redefining the PMO (Boston)
 October 22-23, 2013: Scrum Gathering South Africa 2013

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The Top 10 Reasons Projects Fail

Frank Winters - November 6, 2002



Frank Winters has more than 30 years of consulting and Information Technology experience serving as a project/program manager, consultant and IT service industry executive.

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Projects—especially IT projects—fail. Some statistics say they fail more often than they succeed. Studies by the Standish Group, Gartner, Carnegie Mellon University, PMI and others all point out the same reality: projects very often fail. They are late. They are over-budget. They fail to deliver the product they were designed to produce. Some projects don't produce any product at all.

The dime store mantra of fast, cheap, good—pick two is heard too often. I spoke to a senior IT executive recently who told me that he doesn't hold his people accountable for anything but customer/user department satisfaction. Not the schedule, not the budget or even quality, except as measured by customer satisfaction.

His rationale for this approach is that he has been party to far too many projects that don't produce anything of use to the customer funding the effort. He wants to avoid that at all costs. Failure in this context means not delivering the value for money expected by one or more of the stakeholder groups. This particular executive is willing to fail in almost any way—except by not producing the desired good. In this way he keeps his most important stakeholders happy. Methinks there can and should be a higher standard of success than that. (I wonder what you, the reader, thinks.)

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Even more prevalent than project failure are opinions about why they fail. Everyone seems to have one. Poor expectations management is a common one; inadequate planning is another. A common belief is that poor change management and fuzzy requirements—or ever-changing requirements—are also causes. It's pretty obvious that projects fail for lots of reasons. When you think of the forces that can cause project failure, it's a miracle that any projects are successful at all!

I don't think the list is limited to my 10 or any 10, but I do know that many factors go into project success or failure. Karma, bad medicine, being completely asleep at the switch and voodoo didn't make my list, but on any given day they could have.

So with all this failure and risk of failure, what can be done to ensure a high probability of success? Knowledge of what can go wrong is one very important tool. And that's the purpose of this article. It introduces a series of articles about the causes of project failure that will explore many of the common causes of failure, with an emphasis on mitigation of the associated risks. Perhaps by understanding the causes of failure we can avoid pitfalls when they appear "unexpectedly."

Below is a working Top Ten list. These are some of the most well-recognized reasons for project failure ordered by a guess at descending importance. In addition to an article series, we will be launching a discussion thread soon. I'll bet new and creative ways to fail will be the result. Of course our goal is to arm our readers through the mechanism

TRENDING ARTICLES



Immersion Reporting: The Requirements Alternative

by Laura Burford August 19, 2013

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If traditional data-gathering techniques aren't providing the information necessary to create solid requirements, consider another option not often used by project teams.



Requirements Management for Big Data Projects

by Patti Gilchrist, PMP August 19, 2013

Given the grim statistics for big data projects, it's clear that something must change in the way we manage requirements. But before we can fix it, we need to understand why it's happening.



Don't Go Chasing Waterfalls: 2 Reasons to Avoid Waterfall, and 3 Better Approaches

by Rob Saxon August 19, 2013

The waterfall methodology for projects is aptly named, because it is equally painful to try to go back to prior phases of a project once the effort has advanced to the next phase. This article will outline two reasons to avoid waterfall, and three ways to approach software projects that are more useful.

of forewarning (as in the cliché forewarned is forearmed), hopefully avoiding calamity more often than not.

The Top 10 Reasons Projects Fail

1. Inadequately trained and/or inexperienced project managers
2. Failure to set and manage expectations
3. Poor leadership at any and all levels
4. Failure to adequately identify, document and track requirements
5. Poor plans and planning processes
6. Poor effort estimation
7. Cultural and ethical misalignment
8. Misalignment between the project team and the business or other organization it serves
9. Inadequate or misused methods
10. Inadequate communication, including progress tracking and reporting

I don't know if these in the right order, but it's a start. The list and precedence is based on my experience only and no scientific study has been conducted. Studies in this domain tend to be opinion polls because it is often impossible to determine the cause of failure or success.


The question of success or failure is often itself a matter of opinion as well. In any case, what I'm offering in this series is no more and no less than the benefit of almost 40 years of IT experience, much of it project management related. I do feel strongly about the No. 1 cause on the list—inadequately trained and/or inexperienced project managers. The implications of this include a belief that failure is controllable and avoidable, that the PM has a great deal of responsibility and accountability and therefore needs to have the authority to do her or his job properly. This is extremely challenging in entities using a matrix organization.

However, if your PM has been reduced to an administrator or facilitator without much if any authority, he or she almost certainly will not be effective. So the challenge to the matrix organization is to empower the project manager within the matrix. There will be more to come on this pivotal issue in later articles and, hopefully, from you.

I'd like your feedback and input using the [discussion thread](#). Send your personal top 10 list, or just your take on the most common causes of project failure. I hope the nature of the PM role is discussed as well. I'm sure many of you have opinions based on your experience regarding how to succeed as a PM in a matrix structure. Meanwhile, I'll write about the items in my list and share the input I get from you. My articles will also have some war stories regarding success and failure. Please share some war stories of your own. We might have a contest for the weirdest reason a project failed or, for a refreshing change of pace--

succeeded!

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Pearson product-moment correlation coefficient






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Thesaurus

Legend: Synonyms Related Words Antonyms

Noun 1. Pearson product-moment correlation coefficient - the most commonly used method of computing a correlation coefficient between variables that are linearly related


[product-moment correlation coefficient](#)


[statistics](#) - a branch of applied mathematics concerned with the collection and interpretation of quantitative data and the use of probability theory to estimate population parameters






[coefficient of correlation](#), [correlation coefficient](#), [correlation](#) - a statistic representing how closely two variables co-vary; it can vary from -1 (perfect negative correlation) through 0 (no correlation) to +1 (perfect positive correlation); "what is the correlation between those two variables?"

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