# Strategic Alignment Of Application Software Packages And Business Processes Using PRINCE2

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**ABSTRACT**

*Numerous factors exist that may contribute to the unsuccessful completion of application software package implementation projects. The most significant contributor to application software package project failure lies in the misalignment of the organisation's business processes with the functionality of the application software package. While various IT control frameworks that may assist in the implementation of application software packages are available, the question arises why industry still reports that the success rate of application software package implementation projects remains low. The purpose of this study was to examine the extent to which the Projects in Controlled Environment (PRINCE2) framework assists in the alignment of the organisation's business processes with the functionality provided by the application software package implemented. This study investigated whether PRINCE2 addresses all the reasons for project failure. It identifies the shortcomings and weaknesses in PRINCE2 which may contribute to the misalignment between the business processes of the organisation and the functionality of the application software package implemented. The study recommends how these weaknesses identified in PRINCE2 can be addressed. By taking these recommendations into account when using PRINCE2 to implement application software packages, proper alignment between the organisation's business processes and the functionality of the application software package may be achieved. This results in a more successful application software package implementation.*

**Keywords:**  Strategic Alignment; Application Software; PRINCE2; Business Processes

## INTRODUCTION

everal factors exist that may contribute to the unsuccessful completion of application software package implementation projects. Various reasons have been given for this, many of which stem from either poor project management (Plotnikova, 2007), or the unstructured implementation process followed, to the most significant contributor to application software package project implementation failure, which lies in the misalignment of the organisation's business processes with the functionality of the application software package. This misalignment is attributed to a disparity that exists between an organisation's business processes and the functionality the application software package has to offer to translate the business processes of the organisation into digital form when implementing and configuring the application software package. This results in the implementation of the application software package and the controls surrounding the package being implemented in an *ad hoc* and an unstructured manner. In order to better govern Information Technology (IT) and to minimise this disparity, various IT control frameworks, models and standards (henceforth referred to as frameworks) have been developed over the past number of years. Some control frameworks are general, such as **C**ontrol **Obj**ectives for **I**nformation and related **T**echnology (also known as *COBIT*), while others were developed with a more specific focus, such as Projects in Controlled Environments (also known as *PRINCE2*) or Project Management Body of Knowledge, which assists in the implementation of application software packages. Although it should be expected that these frameworks would increase the chances of application software implementation project success and would mitigate this misalignment, industry reports still show that the success rate of application software package implementation projects are low

(Winter, 2006). A reason for this might be that, although literature that outlines frameworks in general and the implementation of application software package projects is available, they tend to be theoretical in nature. Moreover, previous literature also does not address the complex challenges faced when using a framework such as *PRINCE2* to assist in the strategic alignment of business processes of the organisation with the functionality of the application software package. A study by the Queensland University of Technology (2010) did, however, evaluate *PRINCE2*'s ability to create value in project management.

They argued that if *PRINCE2* can assist to create value and value is created when strategies pay off, then by default strategic alignment should have taken place. They recommended that their study should be extended to explicitly assess the impact of the strategic alignment of *PRINCE2* in an organisation. Therefore, the need existed to investigate the extent to which project management frameworks that assist management to align business processes with the functionality of the application software package exist. McManus and Wood-Harper (2007), on the other hand, argued that although such frameworks may help the stakeholders involved in the project to better organise and deliver application software package projects, stakeholders tend to rely too much on the frameworks. Taylor (2000) supported this view, arguing that application software implementation projects fail because no two IT projects are alike and therefore no single project management framework will be applicable to all projects, nor will all processes be applicable. He argued that each framework has deficiencies and facets that should be customised to a particular project. This study was conducted to address these shortcomings in the application of *PRINCE2*. It is one of the first empirical studies into the impact of *PRINCE2* on the performance of a project and its ability to assist in alignment.

## RESEARCH OBJECTIVE AND MOTIVATION

Several organisations are of the view that the low success rate of application software implementation projects can be addressed by placing total reliance on project management IT control frameworks. The belief is that total reliance will result in proper alignment between business processes of the organisation with the functionality of the application software package (McManus & Wood-Harper, 2007). In spite of the fact that these frameworks are available to assist with the implementation of application software packages, projects still have a low success rate. This study proposed to examine the extent to which *PRINCE2* (a project management framework) assists in the strategic alignment of business processes with the functionality of the application software package. Where the framework does not address alignment properly, this study proposed to identify the shortcomings and weaknesses in the framework and to make recommendations on how these could be addressed.

The study focused on the implementation of generic accounting application software packages acquired from suppliers only. It was not intended to document the technical aspects regarding implementation of a particular application software package.

An organisation's success depends on how appropriate the application software package responsible for the day-to-day activities operates. Organisations that can harness the ability to properly align business processes and the application software package will be able to lower initial implementation costs, as well as capital expenditure, amongst other things. It will also ensure that the application software package delivers to the needs of the organisation. As a result, this study will be useful to business leaders, IT suppliers, IT and business decision-makers.

### Organisational Structure

The Literature Review section outlines the theoretical concepts underlying this study, followed by a discussion on the concept of alignment of business processes and an application software package. This is followed by an overview of the framework selected for the study, *PRINCE2*. The Research Design and Methodology section documents the methodology employed and the findings follow. The paper commences with a summarisation of the most frequently cited reasons for project failure identified from the literature reviewed. The reasons identified were mapped to the processes contained in *PRINCE2* in order to identify whether these reasons for project failure are adequately addressed should *PRINCE2* be used during an application software implementation project. Recommendations are made as to how the weaknesses in *PRINCE2* could be mitigated, thereby ensuring proper alignment of business processes with the functionality of the end product.

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LITERATURE REVIEW

Various reasons have been given for project implementation failure, many of which stem from the unstructured implementation process followed, leading to the misalignment of the organisation's business processes with the functionality of the application software package.

**Main Causes of Project Failure**

Many argue that it is the sole responsibility of the project manager to constantly make trade-off decisions on schedule, quality, and budget limits of the IT project (Chen, Law & Yang, 2009). Leitao (as cited by Winter, 2006) agreed with Coley Consulting (2005) and stated that the three main IT project constraints; namely, time, cost and functionality, are interrelated. This interrelatedness resulted in projects not meeting the desired performance and late delivery or overruns on budget. Cerpa and Verner (2009) have expressed the view that a combination of business, technical and project management factors contribute to application software package project failure. Zand and Sorensen (1975), Taylor (2000), Umble, Haft and Umble (2003), Tillmann and Weinberger (2004), Ehie and Madsen (2005), McManus and Wood-Harper (2007), and Velcu (2010), *inter alia,* attributed project failure to the misalignment of organisational strategies with the application software package project strategies. Velcu (2010) argued that unless organisations use application software packages that support their business strategies, the organisations' risk of project failure is significantly increased. In order to achieve strategic alignment, a structured approach in the form of an IT control framework must be used. This will assist in ensuring that timing, costs and functionality are balanced.

The following sections outline the theoretical concepts underlying strategic alignment and *PRINCE2*. They also outline the necessity for using a framework.

**Concept of Strategic Alignment**

Various authors (Zand & Sorensen, 1975; Taylor, 2000; Umble *et al.,* 2003; Tillmann & Weinberger, 2004; Ehie & Madsen, 2005; McManus & Wood-Harper, 2007) are of the opinion that proper business process and IT alignment is the biggest contributor to an IT project's success. Luftman (2000:3) defined the strategic alignment of business and IT as *'Applying Information Technology (IT) in an appropriate and timely way in harmony with business strategies, goals and needs.'* Soh and Sia (2004:376) defined alignment with regard to application software packages as aligning the '*differences between structures embedded in the organisation (as reflected by its procedures, rules and norms) and those embedded in the package'*. There are two distinct elements in these definitions which are discussed below.

Strategic business and IT alignment started with the search for strategic information systems or application software packages for the organisation to assist in decision-making. This resulted in a resource-based theory capability (or functionality) approach to IT, which has become evident in recent years (Duhan, 2007). With this approach, the focus moved to the implementation of an application software package with an overall functionality affected throughout the organisation and not just the IT department (Peppard, Lambert & Edwards, 2000). Henderson and Venkatraman (1993) developed a model - *the Strategic Alignment Model for IT alignment* - where IT functionality affects all four areas: 1) business strategy, 2) IT strategy, 3) organisational infrastructure and processes, and 4) IT infrastructure and processes. Their concept of strategic alignment was based on two domains - the external domain refers to the business arena, while internal domain refers to how the IT infrastructure should be configured. Misalignment of business and IT occurs because of the dynamic and continually changing nature of business and IT environments and these domains (Hirschheim & Sabherwal, 2001). From the discussion above, two aspects need to be considered for alignment or misalignment to take place: 1) the business aspects and 2) IT aspects.

**Governance and Strategic Alignment**

Information Technology (IT) governance is a subset discipline of Corporate Governance that receives little exposure. Various definitions exist, with the underlying principle being to create a framework to direct, manage and control the use of IT by encouraging an ingrained pattern of worthwhile behaviour for administrators and users alike

with regard to acceptable practices that sustain and extend an organisation's strategies and objectives, while also mitigating IT-related risks. It focuses on the implementation of structures, processes and controls in an IT system (Weill & Ross, 2004).

IT professionals implement control techniques (the actual controls implemented to address the identified risks) to address business and control objectives. This results in a process or system. These control techniques depend on the context created by the environment and can be automated or manual - either preventative, detective or remedial in nature. However, implementing these control techniques on their own is merely *ad hoc*, if not linked to a proper control framework (that provides insight into managing the system, its controls and risk effectively) or model (that focuses on the design, implementation and maintenance controls). Control techniques are implemented by IT professionals, whereas senior management (responsible for ensuring sufficient and effective internal control systems) implements a control framework and models. During the implementation of IT, miscommunication between these parties inevitably occurs. This creates a problem as senior management does not understand the IT control techniques and technology, whereas IT specialists do not understand the control frameworks that need to be implemented (Rudman, 2008). This is referred to as the 'IT gap' and is depicted in Figure 1 (Rudman, 2008). It is this *ad hoc* implementation of controls and the gap in the frame of reference that create weaknesses in any system. Risks and weaknesses are not introduced into a system because there are no policies and procedures or because no controls are implemented, but rather because management and technical policies and procedures do not merge into one risk management unit. It is also argued that the gap exists due to business managers not understanding the technological environment in which the business operates or the extent to which IT can support the business to achieve the business objectives. This results in misalignment between IT and business elements, which needs to be understood (Chen, Kazman & Garg, 2004). A misalignment exists between the objectives of the IT department and the business executives' objectives for IT (Simkova & Basl, 2006). A business-IT alignment process must be implemented in order to overcome this gap between the two. To do this, many companies rely on frameworks. For a business to successfully achieve a business-IT alignment environment, it is important for an enterprise's strategic and business objectives to be translated into objectives for the IT department which, in turn, will form the basis of the IT strategy. When these IT objectives are in line with, and support, the business' objectives, the business-IT alignment process is achieved (Bleinstein, Cox, Verner & Phalp, 2005).
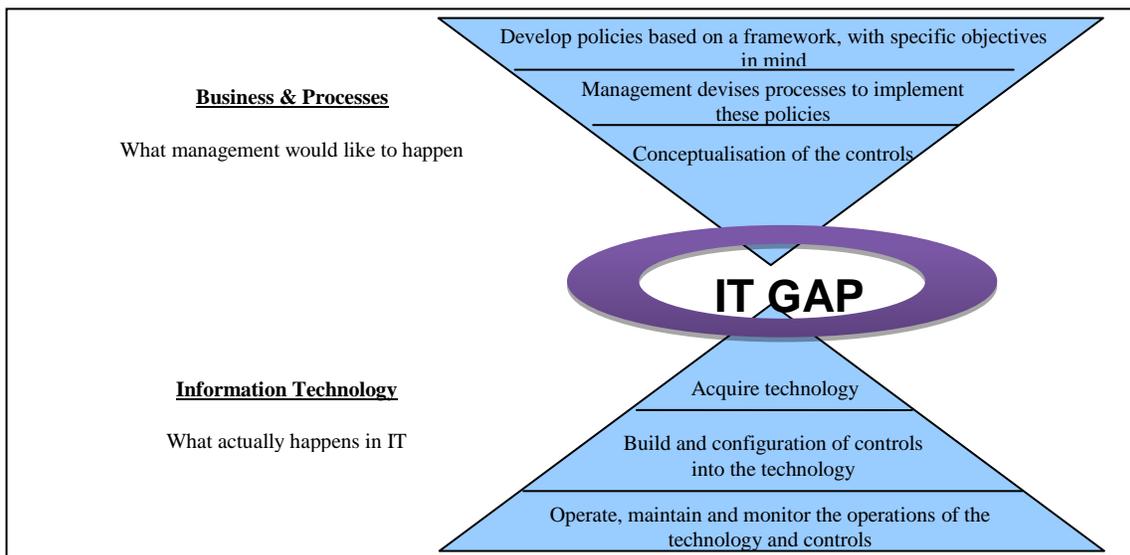


**Business & Processes**

What management would like to happen

Develop policies based on a framework, with specific objectives in mind

Management devises processes to implement these policies

Conceptualisation of the controls

**IT GAP**

**Information Technology**

What actually happens in IT

Acquire technology

Build and configuration of controls into the technology

Operate, maintain and monitor the operations of the technology and controls

**Figure 1:  IT Gap**

If alignment is achieved, it has the advantages that IT strategies become aligned with and are supportive of the strategic business objectives, which reduces the business- and IT-related risks whilst reliable real-time data improves decision making which will lead to better access to new market segments, satisfying new and existing customers' needs and maximising capital investment possibilities (IBM, 2006; Innotas, 2010). However, some

businesses still do not comprehend the value and importance of the alignment process (Smit, 2009) and where no alignment, or misalignment, occurs - for example, because a framework is not used or is incorrectly used - it could result in an enterprise failing to meet its business goals and, consequently suffering financial losses, business interruptions, customer dissatisfaction, and distrust due to ineffective services and support rendered by the IT function (Bakari, Tarimo, Yngström, Magnusson & Kowalski, 2007). Incomplete and inadequate processing and reporting of information could occur due to ineffective and incomplete IT controls (Smit, 2009), whilst excessively high IT costs and overheads occur due to the ineffective use of IT resources (IBM, 2006). There is also a risk of possible increased legal action due to the breaching of relevant laws and regulations (Bakari *et al.,* 2007). It is therefore important that all processes, projects, *et cetera* be governed by means of an appropriate framework, correctly implemented.

## DISCUSSION OF FRAMEWORK

A good IT governance structure must be put in place to ensure that reliable controls are implemented and application software implementation projects are concluded successfully. Various IT control frameworks are available that focus on project implementation.

### IT Control Frameworks

IT control frameworks that focus on project management can be divided into two broad categories: 1) Generic frameworks, such as **Pr**ojects **IN C**ontrolled **E**nvironment (*PRINCE2*) - a project management framework that may be used in any project (OGC, 2009) - or a guide to the Project Management Body of Knowledge (PMBOK guide), which is a methodology that may be used only for IT projects (Project Management Institute, 2008) and 2) Product-specific methodologies, such as Microsoft Dynamics Sure Step, that can be used to implement Microsoft Dynamics products, or the SAP implementation guide which may be used for SAP products.

### PRINCE2

*PRINCE2* is aimed at assisting organisations to manage their projects. It was developed by the UK Office of Government Commerce (OGC) (2009)*,* based on a consolidation of experience from thousands of projects. *PRINCE2* provides a structured approach covering the wide variety of disciplines and activities required for effective project and resource management published in a single document - *Managing Successful Projects with PRINCE2*. The focus throughout *PRINCE2* is on the business case, which describes the rationale and business justification for the project. *PRINCE2* applies four key elements to each project:

1. **Seven Principles -** the guiding obligations and good practices which determine whether the project is being managed using *PRINCE2*
2. **Seven Processes -** steps in the project
3. **Seven Themes -** or aspects that must be addressed continually throughout the project
4. **Project Environment -** the need to tailor *PRINCE2* to a specific context

A project using *PRINCE2* is divided into a number of management stages and each management stage is driven by a sequence of seven processes, which can be broken down further into activities:

1. **Starting Up A Project** is designed to ensure that the prerequisites for initiating the project are in place. This includes the existence of a mandate that defines the justification for the project and the requirements.
2. **Directing A Project** is aimed at the managerial decision-makers (in the form of a project board). The project board manages by exception, monitors via reports, and controls through a number of decision points.
3. **Initiating A Project** is aimed at planning and costing the projects and reviewing the business case, as well as providing the baseline for decision-making. The key output defines the what, why, who, when and how of the project.
4. **Controlling A Stage** involves the activities undertaken by the project management to control work, react to events, and report.

5.  **Managing Product Delivery** consists of those processes relating to the creation and delivery of products. This involves the specification and acceptance of packages, as well as team management activities in defining, delivering and accepting packages.
6.  **Managing Stage Boundaries** produces the information on which decisions will be taken about whether to continue with the project or not, evaluate progress, and lessons learnt.
7.  **Closing A Project** is the process required from the project manager's work to wrap up the project, either at its end or at a premature close (OGC, 2009).

**Selection of a Framework**

*PRINCE2* was selected as an appropriate framework for this study because it is internationally recognised and adaptable to many industries and covers most areas of control. *PRINCE2* is generic: '*it can be applied to any project regardless of project scale, type, organisation, geography or culture*' (OGC, 2009:4) and can therefore also be used for the implementation of application software packages. It is scalable to meet organisations' requirements, depending on project complexity and risk. A flexible framework was selected for this study because the OGC (2009) argued that if *PRINCE2* is not tailored appropriately, it is unlikely that the project will succeed and meet the project requirements. They warn that the use of *PRINCE2* is more than just the adoption of processes and documents alone. It is the adoption of the seven principles (continued business justification, learn from experience, defined roles and responsibilities, manage by stages, manage by exception, focus on products, and tailor to suit the project environment). It is implied that it should cover all areas. The focus throughout *PRINCE2* is on the business case. This is important as this study focuses on the alignment or misalignment of business and IT when implementing application software packages.

It should be noted that the following topics fall outside the scope of *PRINCE2*:

1.  *Specialist Aspects: PRINCE2* is generic and industry- or type-specific activities are excluded.
2.  *Detailed Techniques:* The techniques that *PRINCE2* describes are only applicable to projects using the *PRINCE2* methodology.
3.  *Leadership Capability:* Interpersonal skills (e.g. leadership skills and motivational skills) are excluded and give rise to deficiencies; therefore, the research question.

The OGC (2009) recommends that consideration should be given to the use of best practice guides to address these topics that fall outside of the scope of *PRINCE2*.

**RESEARCH DESIGN AND METHODOLOGY**

**Overview**

This study examines the extent to which *PRINCE2* assists organisations to implement the Strategic Alignment Model and was conducted in four stages:

1.  A literature review was performed in order to obtain an understanding of the underlying theoretical concepts and to identify the reasons for project failure. This literature review included popular press articles, working papers, academic research, peer reviewed journals, as well as documents published by the OGC. The *PRINCE2* framework was studied in detail and the processes summarised in the Literature Review section.
2.  In order to identify reasons for project failure not addressed in *PRINCE2*, this list of reasons for project failure (identified in step 1) was mapped to:
    a.  the reasons listed by the OGC in the best practice guide, *Common Causes of Project Failure*, and
    b.  the processes and activities in the *PRINCE2* framework. In order to do this, the *PRINCE2* processes and activities were first analysed to determine whether the specific reason identified in literature for project failure could be mitigated or reduced by the use of the framework (Mapping the Reasons for IT Project Failure to Office of Government Commerce and *PRINCE2* section).

3.   The shortcomings and weaknesses identified in step 2 (that contribute to improper alignment of business processes with the functionality of the application software package) were grouped together into categories.

4.   Recommendations were formulated for each of the shortcomings and weakness categories (identified in step 3) that contributed to the improper alignment of business processes with the functionality of the application software package. Recommendations were formulated by compiling a best practice guide from all literature reviewed for this study.

The next two sections provide more detail to the process presented above.

**Literature Review**

A literature review was performed in order to obtain an understanding of the concept and to help identify the reasons for project failure. This review also included documents published by the OGC. The *PRINCE2* framework was studied and summarised.

Webster and Watson (2002:xiii) argued that an effective review of prior, relevant literature creates a firm foundation for advancing knowledge. They add, '*it facilitates theory development, closes areas where a plethora of research exists, and uncovers areas where research is needed*'. Okoli and Schabram (2010:1) argue that the review of prior literature '*creates a solid starting point for all other members of the academic community interested in a particular topic*'. Fink's definition (as cited by Okoli & Schabram, 2010) of a rigorous stand-alone literature review suggests following a systematic methodological approach, being explicit in explaining the procedures by which it was conducted, and being comprehensive in its scope by including all relevant items.

The historical analysis conducted in this study followed a concept-centric approach, as suggested by Webster and Watson (2002), and a four-stage approach as suggested by Sylvester, Tate and Johnstone (2011). However, each stage was carried out iteratively and incrementally. Initially, the article selection criterion was made broad deliberately and the selection and number of articles included in this study declined as the review progressed. The research design was informed by a study on representing heterogeneous research literature by Sylvester *et al*. (2011). The timeline distribution of the final selection of articles was between 1975 and 2011.

1.   *The Searching Stage:* The strategy for the searches was deliberately broad and all-inclusive. Search terms, included inter alia 'alignment', 'application software packages', 'information technology gap', 'package failure', 'misalignment', 'business processes', 're-engineering of business processes' and 'business models'. Interloan services, library books, online bibliographic databases and professional subscriptions (such as IEEE, Science Direct, Ebsco host) were used to conduct the search. The articles were not screened for reputation of journal, quality of methods, academic focus or any other criteria. The only requirement was that the articles should fall broadly within the scope of the study. This process provided a set of 169 possible articles or works. The scope was then adjusted to include seminal papers. The following was taken into consideration for selecting seminal papers: Does it make a substantial scholarly contribution? Has the specific paper been cited sufficiently and often enough to be regarded as a guiding influence? The specific articles chosen for this study were evaluated for objectivity and appropriate distribution across the timeline.

2.   *The Mapping Stage (Or Paper Selection):* This entailed refining the original selection of items according to recurring themes. For the purpose of this study, the recurring themes included, inter alia, 'alignment/misalignment of information systems and/or application software packages', 'application package failures/successes', 'information technology gap' and 're-engineering of business processes'. This process was followed by a more detailed reading of the abstracts, introductions and conclusions. This resulted in the original selection of items being reduced to 87 items. This assisted the authors to establish which conceptual, theoretical and methodological concerns could exist.

3.   *The Appraisal Stage:* A detailed reading of each article took place with the view of identifying the main concepts and aspects that could be considered and addressed with regard to reasons for application package project failure. The different themes were compiled into a thematic context by making notes on the articles.

4.   *The Synthesis (Or Data Analysis) Stage:* The authors performed activities, such as combining, integrating, modifying, rearranging, composing and generalising concepts that were identified in stage 3, to ensure that the 'golden thread' or theme of this study could be followed throughout the article.

The process described above in conducting the literature review, provided scientific rigour to the study. The recurring reasons identified from the literature were further summarised into 22 reasons for project failure. The reasons for IT project failures identified from the literature review performed above were divided into three risk categories, as identified by White (as cited in Plotnikova, 2007):

1.     *Business Environment Risks* - risks beyond the project manager's control
2.     *Project Management Risks* - risks that could lead to the improper planning and organising of the work that had to be executed during the project
3.     *Project Execution Risks Or Technical Risks* - risks that could lead to the specification deliverables set to align business processes with the application software package at the beginning of the project not being properly executed

**Mapping the Reasons for IT Project Failure to Office of Government Commerce and *PRINCE2***

A matrix table was prepared, mapping the 22 reasons for IT project failure identified from literature to the reasons listed in the best practice guide by the OGC. The OGC guide was used because the OGC authored *PRINCE2*.

The seven *PRINCE2* processes, together with the activities per process, were summarised. These processes and activities were analysed to determine whether the specific reason for project failure that was identified in literature (in Stage 1 in the Overview section above) could be mitigated or reduced by the use of the framework. The shortcomings and weaknesses were identified because evidence could not be found that *PRINCE2* addressed these reasons for project failure. These appeared to cover the three topics specifically excluded from the scope of *PRINCE2* (refer Selection of a Framework section), as well as additional weaknesses and shortcomings identified during the study. These weaknesses were mapped to the categories of reasons for project failure that were identified.

**Ability of *PRINCE2* to Address All Reasons for Project Failure**

Based on the methodology described above, a matrix table summarising the reasons for IT project failure was compiled from the literature reviewed (limited to reasons recurring most frequently in reviewed literature). These reasons were mapped to the reasons listed by the OGC. This was followed by an analysis of *PRINCE2* to determine whether it adequately addresses the reasons for project failure listed in both literature and the OGC best practice guide. Table 1 shows the most frequently mentioned reasons identified from literature for project failure, as well as its sources. The 'X' denotes whether, based on a review of OGC guidance and *PRINCE2*, an organisation is able to mitigate or reduce the specific reason for project failure if they apply *PRINCE2* to implement an application software package.

**Table 1: Mapping of Reasons for Project Failure Identified in the Literature to the Reasons Stated in Office of Government Commerce Guidance and Reasons Addressed by Applying *PRINCE2* Principles**

| | | Reasons Identified From Literature Reviewed | Source | Listed As Reason By OGC | Reason Addressed By Applying *PRINCE2* Principles | Short-Coming (S) Or Weakness (W) Category |
|---|---|---|---|---|---|---|
| Business Environment | R1 | Poor requirements management (unclear objectives or business case) | Al Neimat, 2005; Cerpa & Verner, 2009; Chin, 2003; Coley Consulting, 2005; Demir, 2009; INTOSAI EDP Audit Committee. s.a.; May, 1998; McManus & Wood-Harper, 2007; Sauer, & Cuthbertson, 2003; Smith, 2002; Taylor, 2000; Umble, *et al.,* 2003; Zand & Sorensen, 1975 | X | X | |
| | R2 | Lack of senior management commitment and support | Al Neimat, 2005; Aloini, Dulmin & Mininno, 2007; Demir, 2009; Kappelman, McKeeman & Zhang, 2006; McManus & Wood-Harper, 2007; Sauer & Cuthbertson, 2003; Smith, 2002; Taylor, 2000 | X | X | |

**Table 1 cont.**

| | | | | | | |
|---|---|---|---|---|---|---|
| | **R3** | Lack of clear links between project and organisation key strategic priorities (alignment) | Aloini, *et al.,*2007; Ehie & Madsen, 2005; INTOSAI EDP Audit Committee. s.a.; Kappelman, *et al.,*2006; McManus & Wood-Harper, 2007; Tillmann & Weinberger, 2004; Velcu, 2010 | X | (1) | S1, W2 & W4 |
| **Project Management** | **R4** | Inadequate business process re-engineering | Aloini, *et al.,*2007; Kim, Lee & Gosain, 2005; McManus & Wood-Harper, 2007; Turbit, 2005 | (6) | (2) | W6 |
| | **R5** | Underestimation of implementation timeline and budget (improper planning) | Al Neimat, 2005; Aloini, *et al.,* 2007; Demir, 2009; Holt, 2003; Kappelman, *et al.,*2006; May, 1998; Sauer & Cuthbertson, 2003; Smith, 2002; Taylor, 2000; Thomas & Fernandez, 2008; Turbit, 2005; Winter, 2006 | X | X | |
| | **R6** | Underestimation of the IT solution complexity (improper planning) | Al Neimat, 2005; Cerpa & Verner, 2009; Demir, 2009; Kappelman, *et al.,*2006; Smith, 2002; Thomas & Fernandez, 2008; Winter, 2006 | X | X | |
| | **R7** | Insufficient risk management | Cerpa & Verner, 2009; Chen, *et al.,* 2009; Demir, 2009; Deng & Bian, 2008; INTOSAI EDP Audit Committee. s.a.; McManus & Wood-Harper, 2007; Taylor, 2000 | X | X | |
| | **R8** | "People" issues (e.g. Not rewarding staff, no work life balance, staff added late to project, unable to work as a team or conflict among stakeholders, poor interpersonal skills, internal politics, resistance to adapt) | Cerpa & Verner, 2009; Chen, *et al.,* 2009; Chin, 2003; Demir, 2009; Holt, 2003; Kappelman, *et al.,*2006; Kim, *et al.,*2005; May, 1998; McManus & Wood-Harper, 2007; Sauer & Cuthbertson, 2003; Taylor, 2000; Turbit, 2005 | X | (3) | W5 |
| | **R9** | Insufficient end user involvement | Al Neimat, 2005; Cerpa & Verner, 2009; Chin, 2003; Coley Consulting, 2005; Demir, 2009; INTOSAI EDP Audit Committee. s.a.; Kappelman, *et al.,*2006; May, 1998; McManus & Wood-Harper, 2007; Sauer & Cuthbertson, 2003; Smith, 2002 | X | X | |
| | **R10** | Inappropriate methodology used | Cerpa & Verner, 2009; Chen, *et al.,* 2009; Chin, 2003; McManus & Wood-Harper, 2007; Sauer & Cuthbertson, 2003; Taylor, 2000 | (6) | (4) | W3 & W6 |
| | **R11** | Lack of resources (improper planning) | Cerpa & Verner, 2009; Turbit, 2005 | X | X | |
| | **R12** | Poor definition of scope of project | Al Neimat, 2005; Demir, 2009; INTOSAI EDP Audit Committee. s.a.; Kappelman, *et al.,*2006; Smith, 2002 | X | X | |
| | **R13** | Poor communication between stakeholders | Al Neimat, 2005; Demir, 2009; Kappelman, *et al.,*2006; Keil & Robey, 2001; May, 1998; McManus & Wood-Harper, 2007; Smith, 2002; Taylor, 2000 | X | X | |
| | **R14** | Improper status monitoring of project (identifying early warning signs) | Bennatan, 2009; Demir, 2009 | X | X | |

**Table 1 cont.**

| | | | | | | |
|---|---|---|---|---|---|---|
| | **R15** | Poor project management capability and planning | Aloini, *et al.,*2007; Chen, *et al.,*2009; Demir, 2009; Ehie & Madsen, 2005; Gargeya & Brady, 2005; Holt, 2003; INTOSAI EDP Audit Committee. s.a.; Jurison, 1999; Kappelman, *et al.,*2006; May, 1998; McManus & Wood-Harper, 2007; Sauer & Cuthbertson, 2003; Smith, 2002; Taylor, 2000; Umble, *et al.,*2003 | X | X | |
| **Project Execution (Technical)** | **R16** | Improper supplier management | Chen, *et al.,*2009; McManus & Wood-Harper, 2007 | X | X | |
| | **R17** | Insufficient software metrics | Aloini, *et al.,*2007; McManus & Wood-Harper, 2007 | (6) | (2) | W3 & W6 |
| | **R18** | Insufficient training of users | Aloini, *et al.,*2007; McManus & Wood-Harper, 2007; Taylor, 2000; Turbit, 2005 | X | (3) | W8 |
| | **R19** | Poor configuration management (poor change control management) | Al Neimat, 2005; Aloini, *et al.,*2007; Cerpa & Verner, 2009; Chen, *et al.,*2009; Coley Consulting, 2005; Demir, 2009; Holt, 2003; INTOSAI EDP Audit Committee. s.a.; Kappelman, *et al.,*2006; McManus & Wood-Harper, 2007; Sauer & Cuthbertson, 2003; Smith, 2002; Taylor, 2000; Turbit, 2005 | X | X | |
| | **R20** | Insufficient user acceptance testing | Cerpa & Verner, 2009; Coley Consulting, 2005; McManus & Wood-Harper, 2007; Taylor, 2000 | X | (3) | W7 |
| | **R21** | Poor understanding by staff of solution capabilities (lack of technical competence) | Demir, 2009; Kappelman, *et al.,*2006; Sauer & Cuthbertson, 2003; Smith, 2002 | X | (5) | W1 |
| | **R22** | Inability to break up implementation into manageable steps | McManus & Wood-Harper, 2007 | X | X | |

(1) Not addressed in *PRINCE2* although listed as reason for project failure by OGC.
(2) Not addressed in *PRINCE2*, as this reason for project failure is specific to the project.
(3) Reference is made to the reason for project failure in *PRINCE2*, but not adequately addressed.
(4) Reason for project failure is not specifically addressed in *PRINCE2*. It is important to note that *PRINCE2* is not product specific.
(5) *PRINCE2* only address competency with regards to managing skills of a project.
(6) Not listed as a reason for project failure by OGC, since it is viewed as an industry specific reason.

It is important to note that the *PRINCE2* guidance published by the OGC includes a section on risk, in general (e.g. risk management strategy and how to evaluate the risks identified), but reference is not made to specific risks that may arise when using *PRINCE2*. Since *PRINCE2* does not include specific risks and the fact that *PRINCE2* does not address all the risks identified in the literature, it leads to shortcomings and weaknesses.

From Table 1, it appears that all the reasons for project failure identified by the OGC are addressed in *PRINCE2*, with the exception of reason three (R3); namely, the lack of clear links between the project and the organisation's key strategic priorities. Therefore, it appears that the strategic alignment aspect is not addressed by *PRINCE2,* in spite of the literature and the OGC identifying this as a risk. However, this is not a weakness in *PRINCE2,* but rather a shortcoming, since it has been identified by the OGC. A couple of other reasons identified by the OGC are only partially addressed (R8, R19, R20 and R21). A further review of *PRINCE2* revealed that Appendix B, Table B.1 of the *PRINCE2* guide on Governance states (OGC, 2009:265):

| **Project Management Principle** | **Addressed By *PRINCE2*?** |
|---|---|
| 'A coherent and supportive relationship is demonstrated between the overall business strategy and the project portfolio'. | 'Partially. *PRINCE2* project should demonstrate alignment to corporate strategy through its Business Case. *PRINCE2* does not provide guidance on portfolio management'. |

It appears that *PRINCE2* states that the alignment of the business strategy and project should be addressed by means of considering the business case and this, therefore, is only partially addressed. Although the authors of *PRINCE2,* on several occasions, mentioned that business objectives should be aligned to the project strategy, they do not provide any further details on how alignment can be achieved. It appears that *PRINCE2* does not address all factors that would ensure project success, leaving a gap in the *PRINCE2* framework. One factor that *PRINCE2* does not address is the lack of clear links between the project's and the organisation's strategic priorities (i.e., alignment).

## SHORTCOMINGS AND CONTRIBUTING WEAKNESSES

Table 2 reflects the summarised *PRINCE2* processes and related activities where shortcomings and weaknesses may exist, specifically with regard to the implementation of application software packages. The 'X' identifies the applicable pervasive shortcomings or weaknesses. The shortcomings and weaknesses identified in the *PRINCE2* activities, which contribute to improper alignment of business processes with the functionality of the application software package, were summarised together. The weakness categories are discussed in the remainder of this section following Tables 2 and 3.

**Table 2:  *PRINCE2* Processes and Activities Summarised and Related Weaknesses**

| Process | Activity | Strategic alignment issue (S1) | Capability/ Competence issue (W1) | Communication issue (W2) | 'How to' issue (W3) | Planning issue (W4) | Soft skill issue (W5) | Tailoring and integration issue (W6) | Testing issue (W7) | Training issue (W8) | No weakness |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Starting Up A Project** | Appoint the executive and the project manager | | X | | (4) | | (5) | | | (6) | |
| | Capture previous lessons | | | | (4) | X | (5) | | | (6) | |
| | Design and appoint the project management team | | X | | (4) | | (5) | | | (6) | |
| | Prepare the outline business case | X | X | | (4) | | (5) | | | (6) | |
| | Select the project approach and assemble the Project Brief | X | X | | (4) | | (5) | | | (6) | |
| | Plan the initiation stage | X | X | | (4) | | (5) | | | (6) | |
| **Directing A Project** | Authorise initiation | X | | | (4) | | (5) | | | (6) | |
| | Authorise the project | X | | | (4) | | (5) | | | (6) | |
| | Authorise a stage or exception plan | | X | X | (4) | | (5) | | | (6) | |
| | Give ad hoc direction | | X | | (4) | | (5) | | | (6) | |
| | Authorise project closure | | X | | (4) | | (5) | | | (6) | |
| **Initiating A Project** | Prepare the risk management strategy | | X | | (4) | X | (5) | | | (6) | |
| | Prepare the configuration management strategy | | X | | (4) | X | (5) | | | (6) | |
| | Prepare the communication management strategy | | X | | (4) | X | (5) | | | (6) | |
| | Set up the project controls | | X | | (4) | X | (5) | | | (6) | |
| | Create the project plan | | X | | (4) | X | (5) | | | (6) | |
| | Refine the business case | X | X | | (4) | | (5) | | | (6) | |
| | Assemble the project initiation documentation | | | | (4) | | (5) | X | | (6) | |

**Table 2 cont.**

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Controlling A Stage** | Authorise a work package | | X | | (4) | | (5) | | | | (6) | |
| | Review a work package status | | X | | (4) | | (5) | | | | (6) | |
| | Receive completed work packages | | | | (4) | | (5) | | | | (6) | (1) |
| | Review the stage status | | X | X | (4) | | (5) | | | | (6) | |
| | Report highlights | | | X | (4) | | (5) | | | | (6) | |
| | Capture and examine issues and risks | | X | X | (4) | | (5) | | | | (6) | |
| | Escalate issues and risks | | | X | (4) | | (5) | | | | (6) | |
| | Take corrective action | | X | X | (4) | | (5) | | | | (6) | |
| **Product Delivery** | Accept a work package | | X | | (4) | | (5) | | | | (6) | |
| | Execute a work package | | X | | (4) | | (5) | | | | (6) | |
| | Deliver a work package | | | | (4) | | (5) | | | | (6) | (1) |
| **Managing Boundary Stage** | Plan the next stage | X | X | X | (4) | | (5) | | | | (6) | |
| | Update the project plan | | | | (4) | | (5) | | | | (6) | (2) |
| | Update the business case | X | X | | (4) | | (5) | | | | (6) | |
| | Report stage end | | | | (4) | | (5) | | X | | (6) | |
| | Produce an exception plan | | | | (4) | | (5) | | | | (6) | (1) |
| **Closing A Project** | Prepare planned closure | X | X | | (4) | | (5) | | | | (6) | |
| | Prepare premature closure | X | X | | (4) | | (5) | | | | (6) | |
| | Hand over products | | | | (4) | | (5) | | X | | (6) | |
| | Evaluate the project | | | | (4) | | (5) | | | | (6) | (3) |
| | Recommend project closure | | | | (4) | | (5) | | | | (6) | (1) |

X   Pervasive shortcoming or weakness identified.

(1) No weakness. Activity entails confirmation of completion and updating of the necessary registers.

(2) No weakness. Activity entails mainly updating of registers and logs.

(3) No weakness. Activity entails assessing how successful or unsuccessful the project was. If the evaluation shows that the project activity is neglected it might have an effect on future projects but not on the current project.

(4) The weakness is not pervasive because the guidance that is provided in *PRINCE2* on how to perform these activities is generalised and not specific for individual fields. It is the user of *PRINCE2* responsibility to apply these generalised activities.

(5) The weakness is not pervasive because insufficient emphasis is placed on people issues, which include leadership, motivational, and other interpersonal skills e.g. team work.

(6) Training is highlighted, but is not focused on all parties. Insufficient training of all parties involved in project could have severe consequences.

One shortcoming and eight weakness categories were identified. The issues of strategic alignment were not addressed by *PRINCE2* at all, whereas reference was made to Soft ('people') issues, but not adequately addressed. All the other weaknesses identified by 'X' were not adequately addressed when *PRINCE2* was applied. Three weaknesses (that hinder proper alignment) that were identified are applicable to all *PRINCE2* activities (listed in Table 3) and appear to be pervasive.

**Table 3:  Weaknesses in *PRINCE2* Applicable to All Processes and Hindering Proper Alignment**

| Weakness Category | Weakness |
|---|---|
| Soft skill issue (W5) | Insufficient emphasis on people issues which include leadership, motivational and other interpersonal skills e.g. team work. |
| Training issue (W8) | Insufficient training of all parties involved in project. |
| 'How to' issue (W3) | No guidance on how to perform activities. |

Tables 2 and 3 highlight significant weaknesses relating to each activity. There are two weaknesses, however, that impact all processes, but the extent to which they contribute to misalignment differs. These are:

1.     Difficulties arising from aligning project goals with business objectives (Strategic aligning issue [S1])
2.     Difficulty in integrating and tailoring the framework to match project size and context as *PRINCE2* methodology is a generic framework (Tailoring and integrating issue [W6])

The categories of shortcomings and weaknesses contained in Table 2 are explained in detail below.

**Strategic Aligning Issue (S1)**

*PRINCE2* only mentions that project goals should be aligned with business requirements through its business case. In *PRINCE2*, the business case entails evaluating whether the project is and remains viable in terms of estimated costs, estimated risks and expected benefits. However, *PRINCE2* does not provide a definition of what is meant by the term strategic alignment and the approach that senior management should follow to align business processes with project goals. The following factors contribute to misalignment of business processes with the project (end functionality of application software package):

1.    application software package requirements not adequately identified
2.    unclear and incorrect package requirements
3.    ill-defined requirements
4.    lack of understanding of package capabilities
5.    difficulty in defining the inputs and outputs of the package

Ill-defined requirements may be due to lack of understanding of the organisation's business model and business processes by the management of the organisation implementing the application software package. Furthermore, in many instances, the management of the organisation implementing the application software package changes business processes to fit into the application software package, which leads to poor strategic alignment of business processes and the functionality of the application software package. These are not addressed in *PRINCE2*.

**Capability/Competence Issue (W1)**

*PRINCE2* recommends that the project manager, as well as the project team members, should have the necessary competencies and be capable of performing the assigned roles and responsibilities. A few competencies are listed in *PRINCE2*, but no definition is provided for 'capability' or how to determine whether the project manager and project team have the necessary capabilities. Contributors toward the capability/competence issue may include: 1) lack of experience on the part of project managers and team members in the specific application software package or 2) difficulty in forming a balanced team composed of detailed personalities and non-detailed personalities.

**Communication Issue (W2)**

*PRINCE2* recommends the preparation of a communication management strategy that entails 1) the communication procedure to follow, 2) tools and techniques that are to be used, 3) records that are to be kept, and 4) timing of communication activities (e.g., meetings). However, *PRINCE2* neglects to address that, in many instances, lower-level management may be hesitant to report any problems to top-level management. Not reporting issues could result in senior management being unaware of the true status of the project (Keil & Robey, 2001). Furthermore, fixed communication structures, as recommended by *PRINCE2,* might be too rigid in some cases. Lastly, in an IT environment, the management of the organisation implementing the application software package and the supplier of the application software package speak different languages. *PRINCE2* does not provide guidance on the approach that should be followed to ensure mutual understanding between the organisation implementing the application software package and the supplier thereof.

**'How To' Issue (W3)**

*PRINCE2* states who shall conduct what activities and in which order they should be conducted, but does not give adequate guidance on how to perform the specific activities. Although *PRINCE2* lists a few detailed techniques, it is too generic to be of any assistance when implementing application software package projects.

**Planning Issue (W4)**

*PRINCE2* emphasises the importance of documentation, specifically during the planning phase, as well as throughout the project life cycle. However, the project manager and project team members should guard against running the project using *PRINCE2* and completing documents becoming more important than focusing on achieving project goals. Although *PRINCE2* warns the users of this issue, no guidance is provided on how to ensure that the project does not fall into the documentation trap. Even though *PRINCE2* emphasises the importance of proper planning, the planning stage of the project is neglected in many instances. The reason for neglecting the planning stage may be due to poor understanding of the business case and, especially, the business processes of the organisation.

**Soft ('People') Issues (W5)**

These *inter alia* entail: 1) lack of user participation, 2) users resistant to change, 3) conflict between team members, 4) team members with negative attitudes, 5) high turnover of managers and/or team members, 6) users not committed to the project, and 7) the project manager lacking adequate people skills. The soft issues are specifically excluded from *PRINCE2* but tend to be a real issue in actual projects. *PRINCE2* states that it is impossible to codify it in a framework. They recommend that the user of *PRINCE2* should study other leadership models and interpersonal skills training programmes to address the soft issues.

**Tailoring and Integration Issues (W6)**

*PRINCE2* recommends that the methodology should be tailored and integrated with industry-specific or type-specific activities, according to the specific project needs, because *PRINCE2* is not 'one size fits all solution'. If the methodology is not tailored according to the requirements of the organisation, it may lead to project failure (Plotnikova, 2007). *PRINCE2* includes a chapter on tailoring *PRINCE2* to the project environment; however, the guidance on tailoring is generic. Furthermore, the guidance requires extensive tailoring, which might be expensive. As *PRINCE2* is generic, a problem is created in that resources may not exist on how to tailor *PRINCE2* to meet the needs of an application software package project exactly.

**Testing Issues (W7)**

*PRINCE2* emphasises that each completed package should be evaluated. When reviewing the product for quality, *PRINCE2* mentions two appraisal methods - testing and quality inspection. *PRINCE2* does not emphasise the importance of end-user testing and only recommends that the reviewer should be independent.

**Training Issues (W8)**

*PRINCE2* recommends that the project manager should evaluate which team members should be trained and that training should be built into the planning of the project. However, reference is not made to the training of the other stakeholders involved in the project (or project managers). If the training of the end user is neglected, the project might seem like a failure due to the end users not properly understanding how the application software package works. Insufficient training may furthermore lead to end users developing resistance to change.

**RECOMMENDATIONS FOR ADDRESSING WEAKNESSES IN *PRINCE2***

Based on the shortcomings and weaknesses identified in *PRINCE2* (in the Ability of *Prince2* To Address All Reasons for Project Failure and the Shortcomings and Contributing Weaknesses sections), recommendations can be made to address the impact thereof. Table 4 links the activity that needs to be performed to address the specific shortcomings or weaknesses (as identified by the "X").

**Table 4:  Recommendations to Address the Shortcomings and Weaknesses**

| | Activity | Strategic Alignment Issue (S1) | Capability/ Competence Issue (W1) | Communication Issue (W2) | 'How To' Issue (W3) | Planning Issue (W4) | Soft Skill Issue (W5) | Tailoring And Integration Issue (W6) | Testing Issue (W7) | Training Issue (W8) |
|---|---|---|---|---|---|---|---|---|---|---|
| **Adaptable Process** | Competencies not mentioned in *PRINCE2* | | X | | | | | | | |
| | Management should be tolerant in certain circumstances | | | X | | | | | | |
| | Tailor the methodology to business environment | | | | X | | | X | | |
| **Communication** | Create a 'bridging' language | X | | X | | | | | | |
| | Adopt less rigid communication structures | | | X | | | | | | |
| **Resource Planning** | Involve key people | X | | | | | | | | |
| | Appoint staff with IT and business knowledge | | | X | | | | | | |
| | Employ staff with the necessary past experience | | | | X | | | X | | |
| | Focus on project goals instead of documentation only | | | | | X | | | | |
| | Introduce application software package early to address certain soft skills issues | | | | | | X | | | |
| **Testing** | Testing of functionality at end of each stage | X | | | | | | | | |
| | Testing by the end user | | | | | | | | X | |
| **Training** | Train first time project managers | | X | | | | | | | |
| | Educate staff members on soft skills | | | | | | X | | | |
| | Train project managers | | | | | | | | | X |
| | Train project team members | | | | | | | | | X |
| | Train the end user | | | | | | | | | X |
| **Mentoring & Coaching** | Mentor first time team members | X | | | | | | | | |
| | Mentor first time project managers | | X | | | | | | | |
| | Implement on the job coaching | | | | | | | | | X |
| **Motivation** | Enhance team building exercises or social activities | | | | | | X | | | |
| | Extra incentives for hard work | | | | | | X | | | |
| **Measuring, Monitoring & Reporting** | Measure technical capabilities | | X | | | | | | | |
| | Measure project management capabilities | | X | | | | | | | |
| | Measure soft ('people') skill capabilities | | X | | | | | | | |
| | Continually asses team members' performance | | X | | | | | | | |
| | Evaluate project manager's soft skills | | | | | | X | | | |
| | Encourage timely reporting of issues | | | X | | | | | | |
| | Measuring project success | | | | | X | | | | |

Recommendations on how to address the shortcomings and weaknesses (in *PRINCE2*) that contribute to the improper alignment of business processes with the functionality of the application software package are discussed below.

**Strategic Aligning Issues (S1)**

1.    *Create A 'Bridging' Language:* A 'bridging' language should be created by appointing a person with both IT and business background to facilitate communication between suppliers and management.

2.  *Involve Key People:* Key people who have an understanding of the specific information requirements and business processes (and reasons therefore) should be involved in the evaluation of business processes.
3.  *Testing Of Functionality At End Of Each Stage:* After the completion of each stage, the end users of the application software package should perform tests before proceeding to the next stage. This will facilitate identifying any misunderstandings encountered at the beginning of the project when the business case is analised.
4.  *Mentor First-Time Team Members:* If it is the first time a specific team member of the supplier of the application software package is responsible for building the requirements of the application software package, it is the responsibility of the supplier to ensure that the team member is assisted or mentored by another team member who has the necessary experience and skills in implementing the specific application software package.

**Capability/Competence Issues (W1)**

1.  *Measure Technical Capabilities:* Capability may be defined as the measure of the ability of a person to achieve the set objectives. Technical capabilities may be measured by the number of years of practical experience that the project manager and team member have of successful implementation of the specific application software package.
2.  *Measure Project Management Capabilities:* Project management capabilities may be measured by the number of years of experience in successful project management appointments.
3.  *Measure Soft ('People') Skill Capabilities:* Soft skill capabilities may be measured by conducting a personality assessment of the person to be appointed as project manager.
4.  *Train First-Time Project Managers:* First-time project managers should receive training in project management and soft skills.
5.  *Mentor First-Time Project Managers:* First-time project managers should be mentored by experienced project managers who have the necessary capabilities.
6.  *Continually Assess Team Members' Performance:* It is the responsibility of the project manager to continually assess team members' performance (capabilities and competence) and to be willing to re-assign people with poor performance.
7.  *Competencies Not Mentioned In PRINCE2:* In addition to the competencies listed in *PRINCE2*, other competencies, such as good team player quality, confidence, enthusiasm, energy and initiative, should receive consideration.

**Communication Issues (W2)**

1.  *Adopt Less Rigid Communication Structures:* The project manager should not depend on reporting structures set at the start of the project only, but should consult whenever it seems necessary.
2.  *Create A 'Bridging' Language:* To create a 'bridging' language, opportunities should be created for the supplier of the application software package to work with or shadow business staff and *vice versa*. Creating a 'bridging' language would give the supplier and the staff of the organisation that is implementing the application software package an opportunity to become comfortable with each other's terminology, methodology, frustrations and needs, as well as create an understanding of each other's environments. Furthermore, creating a 'bridging' language will assist both the management of the organisation implementing the application software package and the supplier to prepare an adequate business case.
3.  *Appoint Staff With IT And Business Knowledge:* Depending on the size of the business, appoint a person with an IT and business background to facilitate communication between the supplier of the application software package and the organisation implementing the application software package.
4.  *Encourage Timely Reporting Of Issues:* To address the issue of team members being hesitant to report issues, the project manager should reassure the project team at the start of the project that a team member would encounter no repercussions if an issue were reported timely; however, repercussions exist if the issue were not reported on time.
5.  *Management Should Be Tolerant In Certain Circumstances:* Senior management and the project manager should be tolerant when there is a good reason for poor performance.

**'How To' Issues (W3) And Tailoring And Integration Issues (W6)**

1.  *Tailor The Methodology To The Business Environment:* The 'how to' and tailoring of the methodology issue go hand-in-hand. The selection of a supporting framework to implement an application software package would not address the strategic alignment of business processes and end functionality of the application software package. How the methodology is made applicable when implementing the application software, taking into consideration the information needs (and business processes) of the company, will address the strategic alignment. The 'how to' issue should be addressed during the planning stage of the project. When the supplier of the application software package decides that a specific course of action should be taken, the detailed techniques for executing the action should be documented at the start of the project by a person who has the necessary experience for this.
2.  *Employ Staff With The Necessary Past Experience:* Project managers (and team members) who have managed past successful implementations of the specific application software package should be included in the team, as they can be seen as the best 'how to' guides. They may only need to fulfill a mentoring role.

**Planning Issues (W4)**

1.  *Measuring Project Success:* Senior management should ensure that the measures for successful implementation of the application software project are not limited to meeting time and budget only. If the whole project is driven by time and cost only, it will fail to meet the business requirements (information needs and functionality).
2.  *Focus On Project Goals Instead Of Documentation Only:* The supplier (project manager and project team) should be careful that the completion of documents does not become more important than focusing on and achieving project goals. The project manager, as well as the team members, should rather apply their minds and consider any other activities that may be relevant to contribute to the success of the project, rather than follow the methodology blindly.

**Soft ('People') Issues (W5)**

1.  *Evaluate Project Manager's Soft Skills:* An important issue for the supplier of the application software package to address is to ensure that the project manager has sufficient people skills. The supplier may, for example, have discussions with team members about previous projects for which the proposed project manager had to act as project manager. If the project manager does not have sufficient soft skills, he or she should attend courses.
2.  *Educate Staff Members On Soft Skills:* It is also advisable for all team members to attend a course in soft skills, specifically conflict resolution, before to the start of the project.
3.  *Introduce Application Software Package Early To Address Certain Soft Skills Issues:* To address the issue of users' resistant to change and lack of user participation, senior management should introduce the new application software package from the initiation of the project. Senior management should emphasise to all users that everyone must and can make a worthy contribution to the successful implementation of the application software package. To address the soft issue of team members not committing to the project, the project manager should ensure that each team member understands what his job entails. Furthermore, the project manager should document what repercussions would entail should responsibilities not be carried out adequately.
4.  *Enhance Team Building Exercises Or Social Activities:* Opportunities should be provided for socialising and interaction between the supplier (project team members) and management implementing the application software package.
5.  *Extra Incentives For Hard Work:* To address the issue of negative attitudes, the project team may receive additional incentives in the form of leave or payment for overtime, for the extra effort put into the project.

**Testing Issues (W7)**

1.  *Testing By The End User:* Detailed and thorough testing should be conducted at the end of each process, as well as at the end of designing the system and user requirements of the application software package.

Thorough end-user testing should be performed before implementation. Testing by the end user will ensure adequate functionality of the application software package and user acceptance. Testing by the end user will further ensure that the performance of the application software package is technically correct and the business process configurations are practical.

## Training Issues (W8)

1.   *Train Project Managers:* First-time project managers should be trained before they are appointed.
2.   *Train Project Team Members:* The project manager should evaluate whether any team members require training. Evaluation may be based on past practical experience or whether the team member attended courses in the past.
3.   *Train The End User:* If the end user does not know how to use the new application software package, training should start early, preferably well before the start of the implementation. If training starts early, it will assist employees in testing the system at the end of each process and make them ready for the change (address the issue of resistance to change) to the new application software package. Training given to the end user (and project team) should be continuous.
4.   *Implement On-The-Job Coaching:* On-the-job coaching, whereby team members coach one another, is a good way to give the necessary (or additional) training, especially when one team member takes over tasks from another.

## CONCLUSION

Several factors exist that may contribute to the unsuccessful completion of application software package implementation projects. Various reasons have been given for this; many of them can be attributed to the unstructured implementation process followed or to over-reliance on IT control frameworks. This results in the misalignment of the organisation's business processes with the functionality of the application software package. Some organisations mitigate this misalignment by using internal control frameworks, such as *PRINCE2*. This study proposed to examine the extent to which *PRINCE2* assists in the strategic alignment of business processes with the functionality of the application software package. Where the framework does not address alignment properly, this study has identified the shortcomings and weaknesses in the framework and recommendations as how these can be addressed are made. In order to achieve this objective, a detailed investigation of available literature and text related to *PRINCE2* had been conducted.

The findings suggest that in order to have a successful application software implementation project in which strategic alignment of business processes with the functionality of the application software package is possible, consideration should not be given to an IT control framework – such as *PRINCE2* – only, but also to whether the following areas (discussed in detail in the Recommendations For Addressing Weaknesses In *PRINCE2* section) are adequately addressed:

1.   Creating an adaptable process that can react to environment
2.   Developing flexible, easy-to-understand communication structures
3.   Developing a system for effective resource planning
4.   Testing
5.   Providing continuous training
6.   Providing mentoring and coaching
7.   Motivating staff and maintaining a balanced working environment
8.   Implementing processes to measure, monitor and report on the project and, in doing, so mitigating the weaknesses in *PRINCE2* and the risk of project failure. Although many weaknesses exist in *PRINCE2* and the alignment of business processes with package functionality is not addressed, the framework may still be used to assist with the implementation of application software packages. When *PRINCE2* is used in conjunction with the recommendations made in this study, proper alignment between the business processes and the functionality of the end product can be achieved.

## AUTHOR INFORMATION

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<u>**NOTES**</u>