Project Portfolio Management Implementation: The Identification and Management Of Pitfalls

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Abstract

The purpose of this study is to propose a structured approach to identifying and addressing the most damaging pitfalls or negative risks that may potentially hinder the successful implementation of a strategic initiative in an organisation. By using a combination of checklists acquired from literature, post-project reviews and interviews conducted with experts and project stakeholders, one may identify those pitfalls that may realise during the implementation of project portfolio management. The assessment of these pitfalls provides a prioritised pitfall list. Response plans to address the high-level pitfalls give the project team the required information to avoid, mitigate, transfer or accept the pitfalls. Monitoring and control processes can be used to appropriately track and address the pitfalls if and when they occur.

Keywords: portfolio management, project, risk management, pitfalls

Topic Area: IS Development and Project Management
Abstract
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1.0 INTRODUCTION
Project portfolio management (PPM) evolved from project management (PM) as a multi-program discipline that provides a synergy that cannot be acquired by managing the same projects separately (Levine 2005; PMI 2006; Maizlish & Handler 2005).

Implementing a PPM is best done through a fully fledged project where PM principles are applied and monitoring and controls are in place to verify that objectives are achieved (Levine 2005, pp. 81–84; Maizlish & Handler 2005).

Project success is directly influenced by the management level of risks conducted by the project team (Zhou, Vasconcelos & Nunes 2008; Elkington & Smallman 2002). Regardless of this fact, project teams often do not take the management of pitfalls seriously and perform risk management on a level not suitable for most projects. This may result in severely underestimating the probability and impact of pitfalls occurring in a project, posing a major threat of project failure (Cervone 2006, p. 256).
Organisations in general do not focus on the identification and management of pitfalls which can cause a strategic project to fail. This is mainly due to the lack of guidance from dedicated and knowledgeable staff and a defined approach focusing on issues such as human, environmental, political and technology ones before and during the project.

This study aims to identify the most important pitfalls present during the implementation of a PPM discipline in organisations such as the SARB. These identified pitfalls can then be analysed and correctly addressed to improve implementation success.

2.0 Theoretical perspective

The PMI describes portfolio management as multiple projects working together to achieve strategic objectives. Organisations with poor track records for managing risks normally fail to deliver the expected benefits (Zhou, Vasconcelos & Nunes 2008, p. 166; Elkington & Smallman 2002, p. 55). Moreover, Martinsuo and Lehtonen (2007) argue that a link exists between portfolio performance and organisational performance. The value of the IT department therefore depends highly on the performance success with which it manages to run its project portfolio.

Thomsett (2004) argues that the key to successful project risk management is the establishment of a common terminology. Maizlish and Handler (2005, p. 181) define a risk as the “potential deviation from expected results”, while the PMI (2004, p. 238) defines a risk as some unexpected or unplanned condition or incident that may either adversely or otherwise favourably influence the outcomes of a project.

Negative risks are also referred to as pitfalls which should be addressed and managed correctly to keep the portfolio management implementation from failing (Freedman 2003). Merriam-Webster’s Dictionary (2008) defines pitfall as a “hidden or not easily recognised danger or difficulty”. Pitfalls therefore have a negative connotation and may cause harm to the project. “Risks” are used loosely in the literature in reference to “pitfalls”. In this case, this paper will use the term “pitfalls”.

Positive risks are referred to as opportunities that may be used in favour of the organisation to improve the possibility of project success (Ahmed, Kayis & Amornsawadwatana 2007). Project teams should exploit the opportunities to the benefit of the organisation.

Tchankova (2002) explains that pitfalls comprise four elements, each forming part of a sequence of conditions or events: the source of the pitfall; the hazard that triggers the incident; the peril that is the result of the incident; and the pitfall exposure, referring to the area that is influenced by the incident. This process is depicted below.

![Figure 1. Components of a pitfall (Tchankova 2002)](image)

It must be noted that if the source of the pitfall is not present, no pitfall can realise. Likewise, the hazard leads to the peril, which results in the risk exposure.

### 2.1 Pitfall management

Pitfall management comprises the approach of the organisation to dealing with pitfalls, the planning; identification; assessment; response planning; and monitoring and control of pitfalls in order to minimize the negative effects of pitfalls to a project (PMI 2004). This process is described in more detail below:

### 2.2 Pitfall identification

Pitfall identification is done by assessing the environment, conditions, and other factors prior and during the project (Levine 2005; Maizlish & Handler 2005). Pitfall identification is aided by using lists compiled from various sources; having discussions with experienced project managers; drawing upon one’s own experience; using a risk breakdown structure (RBS); and analysing post-project reviews (PMI 2004, p. 244; Iranmanesh, Jalili & Pirmoradi 2007; Hillson, Grimaldi & Rafele 2006; Palomo, Insua & Ruggeri 2007).
Categorising of pitfalls is the first step in the identification process (Hanford 2008). Categorisation will also provide sets of generic pitfalls that can be dealt with in a generic way. A suitable framework to categorise pitfalls is available in the nine knowledge areas of the PMI, augmented with elements acquired from models available in the literature (PMI 2004; Light & Gerrard 2007; Zhou, Vasconcelos & Nunes 2008; Elkington & Smallman 2002).

### 2.3 Assessing pitfalls

Once pitfalls are identified, they must be evaluated and prioritised. Evaluation of pitfalls is often based on subjective measures, but must be handled in a consistent manner (Thomsett 2004); for example, the complexity of producing a product should be linked to the product itself, and not to the team that should produce the product. Software developers, for instance, have devised means to measure the complexity of a software system by awarding a value to the number of links to existing or future systems or the size of a project (Barki, Rivard & Talbot 2001; Thomsett 2004).

Different people will perceive pitfalls differently. This difference in perspective should be viewed in a positive way since it can result in a comprehensive view of, and exercise in, identifying and addressing the pitfalls in a project (Fenton & Neil 2006b). Fenton and Neil (2006a) propose that evaluating a pitfall is simplified by visualising the scenario if a pitfall should occur. A causal or risk map, can assist the team to view the pitfall as a series of events that can damage the project.

The threat that a pitfall poses can be expressed in terms of the impact of the pitfall on the project and the probability of the pitfall occurring (Cox 2008). The matrix model depicted below describes the probability and impact of pitfalls in terms of numeric values. These factors are multiplied to provide the overall magnitude of the pitfall. A higher pitfall magnitude indicates a greater threat of the pitfall to the project (Cox 2008). The pitfall is mapped according to its magnitude to the appropriate cell in the matrix.
## Table 1. Pitfall assessment matrix using numerical scales (based on Cox 2008; PMI 2004)

<table>
<thead>
<tr>
<th>Impact</th>
<th>Probability</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>5</td>
<td>10</td>
<td>15</td>
<td>20</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>8</td>
<td>12</td>
<td>16</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>6</td>
<td>9</td>
<td>12</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

This use of different shading or colours (RAG indicators) provides a quick and simple identification of risk level to the project team and has value during reporting and feedback sessions.

The pitfall assessment matrix where pitfalls are placed in the low, medium or high categories also serves as a high-level pitfall prioritisation process with high-level pitfalls receiving the highest priority. This provides a qualitatively assessment as team members award a subjective value to both probability and impact (Cox 2008). Two pitfalls may end up with the same magnitude or cell in the matrix. The project team may then decide to imply a discrimination factor (Cervone 2006) to break the deadlock.

Quantitative analysis predicts losses to the project in terms of money, benefits or time if a pitfall should occur. Quantitative analysis requires a highly objective view of all the objectives and deliverables of the project. Work breakdown structures will assist the project team to acquire more accurate estimates enabling the team to assess pitfalls quantitatively (PMI 2004; Iranmanesh, Jalili & Pirmoradi 2007).

### 2.4 Responding to pitfalls

Pitfalls with highest priority should be addressed first. Pitfalls can be avoided, transferred or mitigated, depending on the phase of the pitfall or the project, the current activities, and the environment, and the attitude of the organisation toward pitfall management (PMI 2004, p. 240). The project team will have to decide which actions to take to avoid the pitfalls or to minimise the effects of them realising. The project team may also decide to accept the pitfall if its probability or impact is very low (Alexander & Marshall 2006).
The project team’s options to address the pitfall diminish through the sequential realisation of the pitfall phases. This can be explained by means of Tchankova’s (2002) model for pitfall identification. As soon as the pitfall has been identified, the team can avoid the pitfall, or mitigate or transfer the consequence of any hazards. Once the hazard has realised, the team can no longer avoid the pitfall from occurring. The model is depicted in Figure 2:

![Figure 2. Acting upon pitfall components and events (based on Tchankova 2002)](image)

One should, however, note that changes in plan to address a pitfall may not be without additional costs to the project. Thomsett (2004, p. 11) argues that the cost is lower and the effectiveness is higher when one deals with pitfalls before commencing with the project rather than doing so after the project is underway.

### 2.5 Pitfall monitoring and control

Monitoring and control of pitfalls comprise the identification of new pitfalls, monitoring and re-evaluation of existing pitfalls and continuous scanning for trigger events that may result in a pitfall (PMI 2004). The project team document the changes in pitfall magnitudes and also record events that may trigger pitfalls into the risk register. The register should be continuously reviewed, updated and managed.

Different categories of pitfalls may be dealt with by different role players in the team; for example, operational pitfalls by the SMEs, and business pitfalls by the business or business executives, or by the project sponsor (Thomsett 2004, p. 12; Light & Gerrard 2007, pp. 3–6). Cervone (2006, p. 260) suggests that the project team focus on only the top ranked pitfalls in order to keep the pitfalls manageable and the focus of the team on the project.
2.5.1 Pitfall control strategies

One main strategy to avoid pitfalls is to focus on effective communication (Cervone 2006). When all stakeholders in the communication process are included, they can contribute to the early identification of pitfalls and can be alerted when pitfall triggers are eminent.

Another strategy can be found by drawing an analogy between Cooper’s (1995, p. 26) training plan to address health and safety issues in a production company, and that of maturing the project team in technology, processes and procedures. Ensuring adequate training for project team members will increase communication and common understanding of concepts. Pitfalls due to technological complexities may be reduced by adequate training in the technology that the project is deploying (Tchankova 2002).

Project teams can function more effectively by using a structured approach to pitfall monitoring and control. This approach includes the use of a hierarchical control structure (Cooper 1995, p. 28) or framework (Ahmed, Kayis & Amornsawadwatana 2007, p. 31). Cooper (1995) argues that the removal of the hazard proves the most effective form of control while other pitfalls can be addressed by implementing effective policies and measuring and reviewing compliance and performance. Implementing and adhering to the above structure will minimise the occurrence and effect of pitfalls.

3.0 RESEARCH METHODOLOGY

The research process commenced with a literature study of the PM and PPM environments. A list was compiled comprising pitfalls discussed in the literature. The pitfalls included in the list were obtained from Doherty and King (1998); Chaudron (2003); Freedman (2003); Light and Gerrard (2007); and Zhou, Vasconcelos and Nunes (2008). A second list was compiled from post-project reviews of 22 ICT projects.
The two lists were combined; duplicates removed and the readability of pitfalls improved. Discussions with subject matter experts (SMEs) and other project stakeholders served to augment the list. These steps resulted in a checklist of 170 pitfalls, of which some may be present during the implementation of PPM.

Three rounds of interviews were conducted with 36 project stakeholders. The first round required demographic information and interviewees were provided with the compiled list of probable pitfalls that may be present during implementing PPM. Interviewees were requested to indicate which of the pitfalls may be present during the project. This resulted in a prioritised list of probable pitfalls. The magnitudes of the top ranked 20 percent pitfalls (Cervone 2006) from round one were acquired during round two. Six pitfalls were identified as high-level pitfalls. The third round of interviews acquired the response plans to the high-level pitfalls.

The following research methods are therefore applied to the study:

- Literature survey
- Case study: SARB
- Interviews

3.1 Population and sample selection

The total population of the IT department comprises 160 staff members, of whom about 40 per cent are actively involved in PM (SARB 2006).

An information session was conducted to inform project stakeholders of the intention to implement PPM. The invitees to the session represented all levels and disciplines of ICT PM in the Bank. Clients of the IT department involved in ICT projects were also invited to improve overall representation. Although only about 25 per cent of the invitees attended, it was not completely unexpected as information sessions are normally ill attended by project managers and stakeholders. No departmental clients attended the information session.
The presentation was followed up by interviewing staff members based on their availability during the interview period. Three rounds of interviews were conducted with 36 members participating. The interviews rendered 26, 31 and 10 responses respectively.

4.0 RESULTS AND FINDINGS

4.1 Demographic information

Twenty-six responses were received after the first round of interviews. This represents approximately 30 per cent of the population who may be part of the stakeholders of the PPM project. The distribution of the respondents to the questionnaire is as follows:

The time that respondents were involved in project management:

<table>
<thead>
<tr>
<th>Period involved in ICT projects</th>
<th>Responses</th>
<th>Percentage of respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>More than 10 years</td>
<td>12</td>
<td>46%</td>
</tr>
<tr>
<td>More than 3 years up to 10 years</td>
<td>9</td>
<td>35%</td>
</tr>
<tr>
<td>0 to 3 years</td>
<td>5</td>
<td>19%</td>
</tr>
<tr>
<td>TOTALS</td>
<td>26</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 2. Period participants’ involvement in ICT project management

Participants’ general experience in project involvement was high with 46 per cent of the stakeholders having more than 10 years’ experience in ICT projects, while 35 per cent had between 3 and 10 years’ practice.

The roles they played in projects between 2006 and 2008:
<table>
<thead>
<tr>
<th>Stakeholder Role</th>
<th>Responses</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrator</td>
<td>5</td>
<td>19%</td>
</tr>
<tr>
<td>Client</td>
<td>2</td>
<td>8%</td>
</tr>
<tr>
<td>Owner/sponsor</td>
<td>2</td>
<td>8%</td>
</tr>
<tr>
<td>Project manager</td>
<td>13</td>
<td>50%</td>
</tr>
<tr>
<td>SME</td>
<td>12</td>
<td>46%</td>
</tr>
<tr>
<td>Team leader</td>
<td>11</td>
<td>42%</td>
</tr>
<tr>
<td>Team member</td>
<td>22</td>
<td>85%</td>
</tr>
<tr>
<td>Testing/quality assurance/quality control</td>
<td>11</td>
<td>42%</td>
</tr>
</tbody>
</table>

Table 3. Participants' roles in ICT project management

The roles played by respondents in ICT projects cover the spectrum of ICT PM well, although bias may be toward active project participation rather than playing a management role.

4.2 Identification of pitfalls in the project portfolio management project

During the interviews, participants in the study were requested to select those pitfalls from a provided list that they deem to be present in the implementation of PPM in the Bank. Participants were afforded the opportunity to add additional pitfalls that had not been included in the list.

The process of identifying pitfalls was explained and the questionnaire guided participants toward the different sources of possible pitfalls.

Identifying pitfall prominence entailed counting the number of participants who believed that a particular pitfall may occur. Based on Cervone (2006) the top 20 per cent identified pitfalls were retained for assessment. Given that pitfall selection was based on probability only, some pitfalls with a low probability but high impact may not have been selected. This poses little risk to the study and project, since the overall magnitude of the pitfall will remain low or medium.
4.3 Assessment of the identified pitfalls in the project

Although participative processes such as the Delphi technique can be used effectively to assess pitfalls present in a project (Thomsett 2004, p. 10), scheduling more than ten people for a meeting can pose a practical problem in a support organisation such as the IT department of the Bank. Interviewing the participants reveals diverse views on the levels of probability and impact of pitfalls and can provide a suitable qualitative result (Hannabus 2006).

During a second round of interviews, 35 participants were requested to assist in assessing the most prominent pitfalls. Assessment was done in terms of probability and impact on the project. A total of 31 responses were received.

Because the assessment of pitfalls is based on subjective issues such as personal experience, morale, involvement in other projects, functional responsibilities and circumstances currently being experienced in the Bank, the results are subjective. Therefore, the main output of assessing these pitfalls is limited to determining the magnitude of the individual pitfalls relative to each other (Ahmed, Kayis & Amornswadwatana 2007, p. 28).

Quantitative assessment is not possible at this time as no baseline plans are in place and too little detailed information is currently available about the project. Quantifying the assessment of pitfalls done later in the project can assist the team to evaluate the effect of the pitfalls occurring in budgeting, deliverables and time lines of the project.

The top 32 pitfalls for this project were mapped on a matrix comprising numerical scales ranging between 1 and 10 on both the probability and the impact axes rendering the pitfall magnitude as a percentage. The average of the probability of the pitfall occurring and the average of the impact of the pitfall on projects were multiplied to achieve an average assessment for the pitfall.

The pitfalls were categorised arbitrarily with low-level pitfalls having magnitudes between 0 and 30 per cent, medium-level between 30 and 45 percent and high-level pitfalls 45 per cent and higher.
4.4 Results of the assessment of the identified pitfalls

With the aid of the above assessment structure, six pitfalls were rated as high-level:

<table>
<thead>
<tr>
<th>Rank</th>
<th>Pitfall magnitude</th>
<th>Average probability</th>
<th>Average impact</th>
<th>Pitfall</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>56%</td>
<td>74%</td>
<td>75%</td>
<td>Timeous project deliverables are hampered by lengthy internal processes</td>
</tr>
<tr>
<td>2</td>
<td>55%</td>
<td>72%</td>
<td>76%</td>
<td>Internal politics between stakeholders may hamper the success of the project</td>
</tr>
<tr>
<td>3</td>
<td>49%</td>
<td>75%</td>
<td>66%</td>
<td>Team members are doing functional work as well</td>
</tr>
<tr>
<td>3</td>
<td>49%</td>
<td>74%</td>
<td>66%</td>
<td>Resources are split amongst various projects</td>
</tr>
<tr>
<td>3</td>
<td>49%</td>
<td>71%</td>
<td>70%</td>
<td>Human resources shortage may hamper the success of the project</td>
</tr>
<tr>
<td>6</td>
<td>48%</td>
<td>73%</td>
<td>66%</td>
<td>A project that seems simple can evolve into something complex</td>
</tr>
</tbody>
</table>

Table 4. Assessment values of the top six pitfalls

The top-ranked pitfalls can be categorised according to the divisions used during the identification phase:
<table>
<thead>
<tr>
<th>No.</th>
<th>Pitfall</th>
<th>Category</th>
<th>Sub-category</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Timeous project deliverables are hampered by lengthy internal processes</td>
<td>Time management</td>
<td>Scheduling of activities</td>
</tr>
<tr>
<td>2</td>
<td>Internal politics between stakeholders may hamper the success of the project</td>
<td>Project integration management</td>
<td>Organisational issues</td>
</tr>
<tr>
<td>3</td>
<td>Team members are doing functional work as well</td>
<td>Human resources management</td>
<td>Roles and responsibilities</td>
</tr>
<tr>
<td>4</td>
<td>Resources are split amongst various projects</td>
<td>Human resources management</td>
<td>Roles and responsibilities</td>
</tr>
<tr>
<td>5</td>
<td>Human resources shortage may hamper the success of the project</td>
<td>Human resources management</td>
<td>Human resources availability</td>
</tr>
<tr>
<td>6</td>
<td>A project that seems simple can evolve into something complex</td>
<td>Scope management</td>
<td>Scope management, including change control</td>
</tr>
</tbody>
</table>

Table 5. Categorisation of high-level pitfalls

The list of pitfalls that were identified and assessed can be categorised per level, as depicted in Table 6:

<table>
<thead>
<tr>
<th>Level of pitfall</th>
<th>Number of pitfalls</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>6</td>
</tr>
<tr>
<td>Medium</td>
<td>24</td>
</tr>
<tr>
<td>Low</td>
<td>140</td>
</tr>
</tbody>
</table>

Table 6. Pitfalls per level
4.5 Analysing the high-level pitfalls

- Timeous project deliverables are hampered by lengthy internal processes: Policies and procedures negatively influence the procurement and acquisition of resources and services for the project. No third party service may be rendered to the Bank unless a contract has been entered into and the service provider has successfully passed a security vetting process. If conditions are not managed carefully, they may cause delays that could result in missed milestones, upset stakeholders and create an environment of discontent and low morale.

- Internal politics between stakeholders may hamper the success of the project: Functional managers are generally at a higher management level than project managers in a department. As functional managers are individually evaluated according to the performance of their operational division, conflict may exist between their own responsibilities and the provision of resources to project managers in other operational areas. This conflict may additionally result in experienced stakeholders being utilised mostly in their own functional areas and junior staff being assigned to projects that may not have the same impact as those in their own areas. Competition among staff members about to be involved in high-profile projects may also result in ill feelings among staff members.

- A project that seems simple can evolve into something complex: Project team members are also responsible for functional activities in the Bank. Consequently, staff members who were involved in the development of a project now also become responsible for the maintenance of the project. Projects of this nature tend to be endless and will grow evolutionary. Although scope management is applied during the project implementation, it is not necessarily applied after the project has been formally closed out. Maintenance and upgrading become synonymous, resulting in complex and overbuilt applications. Another reason for this pitfall may be a lack of proper communication between users and developers, leading to scope creep. Users are allowed to change requirements when more information becomes available during the development process. Unless user specifications are properly documented and change control is tightly managed, the scope can become out of control.
The following group of pitfalls dealing with human issues can be handled together:

- Team members are doing functional work as well
- Human resources shortage may hamper the success of the project
- Resources are split amongst various projects

This group of pitfalls may have similar causes. The structure of the department is functionally oriented. Functional managers form the senior management layer of the department together with the departmental head and the enterprise architect.

In their main role as support for the line departments of the Bank, the functional divisions’ main focus is the stability and maintenance of the operational areas in which their assigned business areas function. The functional managers need to decide how to deploy the available resources. Project schedules are normally adjusted to allow for high-intensity business activities such as year-ends or other events. Operational activities will generally have preference above project requirements. This may result in team members being over-utilised and eventually they may not be able to meet deadlines and achieve milestones.

Project continuity becomes a problem since training, operational activities and other project commitments may deter the project members from their focus during this project. No pooled resources are available for project managers, and resources are moved from one project to another according to the priority or urgency of projects.

From the table above, it is apparent that HR management issues can pose a major threat to the project of implementing PPM (Thomsett 2004, Marr & Parry 2004). By paying specific attention to HR management, the project team should be able to mitigate many of the top-ranked pitfalls in the project.
4.6 Response to high-level pitfalls

Pitfalls may be addressed by

- Accepting the pitfall
- Avoiding the pitfall
- Transferring the pitfall
- Mitigating the pitfall
- Performing any combination of the above actions (Van Wyk, Bowen & Akintoye 2008)

The option of accepting the risks was not viable as this alternative would only be a suitable response to a low-level pitfall (Alexander & Marshall 2006); it is therefore not applicable to any of the top six pitfalls.

Participants were requested to provide appropriate response plans to the high-level pitfalls.

Responses were received from ten participants after the third round of interviews. The responses were not evaluated for credibility as this paper focuses on the process of acquiring the responses.

If a response plan is introduced, the initial value of the pitfall probability or impact may decrease. Many response plans can be implemented to address one pitfall. With the implementation of more than one response plan, the results can be aggregated until the pitfall is rated as low. Care should be taken that a response plan does not create another pitfall in a different area. For example, if controls are removed to streamline a process, a risk of mismanagement may occur in another area.

An example of mitigation plans to address the pitfall “Team members are doing functional work as well” is depicted in Table 7:
<table>
<thead>
<tr>
<th>Initial probability</th>
<th>Initial impact</th>
<th>Response plan</th>
<th>Change in probability</th>
<th>Change in impact</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>75%</td>
<td>66%</td>
<td>1. Resource planning must be introduced</td>
<td>-20%</td>
<td>-30%</td>
<td>The project manager must create and implement a comprehensive resource plan</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. Staff performing maintenance functions must not be allocated to projects</td>
<td>-20%</td>
<td>-20%</td>
<td>This action will indicate clearly which people are not available for projects. The project manager must take note</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. Staff performing maintenance functions must not be given more than 20% time on a project</td>
<td>-20%</td>
<td>-10%</td>
<td>This allocation will give the project team the information needed to do accurate HR planning. The project manager must discuss the matter with the functional manager and sign an agreement</td>
</tr>
</tbody>
</table>

Table 7. Extended pitfall assessment matrix to reflect the effectiveness of mitigation plans

All the plans may be viable, but Plans 2 and 3 may have a negative impact on the pitfall of “Human resources shortage may hamper the success of the project” as it may remove candidates for the role of stakeholder from the project. The project team should investigate the viability and the impact of the mitigation scheme on the base plan, document the results and deploy those plans that can lower the number of high-level pitfalls.
Devising plans to address each top-ranked pitfall individually enables the project team to focus on the project instead of spending time and resources to reactively address and act on pitfalls that threaten to harm the project. Reactive practices require the implementation of contingency plans (Ahmed, Kayis & Amornsawadwatana 2007) and may imply the use of slack in the project schedule, employing contingency reserves or fallback plans (PMI 2004). This approach is not desirable and should be avoided if possible.

Introducing appropriate pitfall controls, as described in Chapter 4, into the general policies and practices of the organisation can help to minimise the effect of many pitfalls. Unfortunately, not all pitfall control measures provide a quick-win solution as they may sometimes require a change in culture or the creation of new policies in the organisation. Many pitfalls will therefore have to be dealt with before the control measures can come into play. Residual risks or pitfalls that remain after appropriate controls have been put into place must be addressed individually.

Devising the appropriate controls and long-term plans to improve the probability of project success is beyond the scope of this study and is therefore left up to the project manager. This issue may also be part of a future initiative or study in the IT department.

5.0 RECOMMENDATIONS AND CONCLUSION

5.1 Introduction

By drawing on the success of the creation of a culture of safety and quality in the industry (Cooper 1995), ICT projects can benefit largely by generating a culture of risk awareness. It is important that project teams’ innovation should not be suppressed by the omnipresence of pitfalls in acting, reporting and making decisions. One should, however, keep risks and pitfalls in mind at all times when acting in a project environment (Thomsett 2004).
By embedding control measures in the project life cycle, many areas where pitfalls were identified can be addressed through controls such as good communication and thorough training (Cooper 1995; Tchankova 2002; Cervone 2006). This approach will increase the possibility of project success.

Cooper (1995) suggests that behavioural changes such as being vigilant, reporting on all incidents, taking fellow team members into account, abiding by policies and rules, and taking responsibility for one’s own actions can all be supported by proper training. This is applicable to PM as well as to project teams whose members trust one another because they will have greater success in achieving the project objectives.

By improving communication among stakeholders, expectations are managed better, hidden information is brought into the open and concerns and issues are made visible as soon as they are detected. Cervone (2006) argues that the best way to avoid pitfalls is effective communication among project team members and between the project team and the organisation.

5.2 Recommendations

By moving toward implementing a PPM discipline, the Bank has indicated its desire to increase PM maturity in the organisation. The understanding of the project environment, the potential conflict between the change manager from the project’s side and the operational manager who seeks stability; and the general culture difference between functional and project objectives lead to interesting conflict situations that may cause many pitfalls in the project environment. Internal politics as a pitfall refers to the issues above and received a high-level rating during this study.

Project portfolios should be used to improve, expand and transform the business (Rajegopal, McGuin & Waller 2007; D’Amico 2005; Blichfeldt 2007). Although this research paper concentrated on the process of implementing PPM in the business, it must be recognised that the success of this project depends on the usefulness of the PPM that was implemented.

By successfully identifying and appropriately managing pitfalls that may be present during the implementation of PPM in the Bank, the chances of the project being
successful can be significantly improved. By prioritising and limiting the number of pitfalls to be managed, the project team will be able to focus on the actual planning and implementation process instead of overspending resources on pitfall management. Cervone (2006) suggests that the project team focus on the top 20 per cent of identified pitfalls.

Issues that can assist in minimising the influence of pitfalls on the project are discussed below:

5.3 **Social factors**

Social factors are rated as the most important issues in PM (Thomsett 2004). The skills and experience of the project manager, functional managers and supervisors are tested to the utmost to satisfy operational, project and personal needs. Three of the six high-level pitfalls fall into the category of HR management.

Stakeholders may serve their relationships best by entering into service level agreements, statements of understanding or operational level agreements. This approach will ensure that stakeholders appreciate the context of resource requirements and use and have an unambiguous understanding of project objectives and deliverables and the processes to be followed for amendments, escalations, penalties and incentives.

The involvement of management can help to address internal politics that may hamper the success of the project. This involvement needs to take place throughout the life cycle of the project (Zhou, Vasconcelos & Nunes 2008, p. 173)

A better project prioritisation process will keep the focus of stakeholders on a balance of projects that are within the resource, technological, time and risk capabilities of the organisation. This will ensure that human resources are applied to projects and project processes where they can contribute most to organisational objectives without being over-extended, overworked and under-trained. This PPM-optimised process can address many human-related pitfalls in projects.
Change management should be implemented and exercised during any project where processes, infrastructure, services, resources usage or applications are non-transparent to customers and other stakeholders. This will also assist with the buy-in of stakeholders.

Project managers should keep the well-being of the stakeholders constantly in mind since PM is about mobilising resources to achieve pre-determined objectives. A motivated team can contribute more than individual geniuses striving to achieve their personal objectives.

5.4 Resource planning and management

A lack or low level of resource planning and management is one cause of the human issues experienced in projects in organisations. During interviews for this study, concerns related to unequal work distribution surfaced. Although these concerns are also general management and skills retention issues, they were reflected in the pitfalls identified in the project.

Skilled staff members believe that the work distribution is skewed by the allocation of most of the work, including virtually all mission-critical tasks, to the skilled workforce, who are in the minority in the department. Newly appointed staff members normally do not have the necessary skills to perform the business-critical work at the level required by the business. Skilled staff members are then required to ensure that new appointees acquire a higher level of competency.

The above, in addition to the number of projects accepted by the department and the additional chores of operational activities, place the skilled staff under a great deal of pressure and may lead to bad resource decisions during project team selection.

A recruitment strategy whereby the organisation uses more sophisticated tools to better evaluate the skills of the applications will help to improve the base skills of new appointees. This will alleviate some of the workload of the skilled base and assist in balancing the distribution of tasks within the organisation.
By implementing a resource plan that integrates skills, work distribution, succession planning and long-term views on business and staff retention strategies may address most of the above issues.

A project prioritisation process that integrates with the resource plan is required to ensure that the organisation has the resources and the capabilities to engage in new projects.

5.5 Roles and responsibilities of project stakeholders

Educating stakeholders about their roles in the project team can improve communication, remove ambiguity and improve understanding and relations. The roles of owner, sponsor and client must not be underplayed. Although their roles may seem small during the development and planning phases, these stakeholders hold the key to the project being deemed a success or a failure (Pinto & Mantel 1990). It is important that these stakeholders understand their rights, authority and responsibilities. When stakeholders are empowered, the resulting synergy in the team can help to render a difficult project successful.

5.6 Maturing the project management environment

The Bank will embark on a process of PM improvement by implementing the PPM discipline in the Bank. The PPM maturity model proposed by Fitzgerald and Mieritz (2007) evolves through six levels, from one described as “non-existent” or ad hoc (Level 0) to one that is fully matured or optimised (Level 5). PPM maturity addresses people, PPM processes, financial management, technology and relationship issues.

PPM processes are integrated into the functional area in a mature PPM environment (Levine 2005, pp. 90–92), simplifying access to resources and shortening turnaround times for acquisitions. This will allow project teams to share resources and information, improve communication and create synergy among projects in the portfolio.
5.7 Using controls to minimise the peril of pitfalls

By putting the appropriate controls into effect, the organisation can improve PM expertise, reduce the influence of pitfalls on this implementation project and on others, and enhance the level of co-existence of PM within the functional areas, thereby removing many obstacles and pitfalls from the PM environment.

Cervone (2006) argues that effective communication is the key success factor in avoiding pitfalls. Communication achieves common understanding and clarity. Issues are identified and discussed as soon as they become known, enabling the project team to react in time to avoid an escalation of problems and issues.

Cooper’s (1995) reasoning about creating a safe environment in an organisation through proper training can be applied to the creation of a technology mature environment for the project team. The implementation of suitable training can render complex technology understandable and manageable, minimising the effect of the complexity in the project (Cervone 2006, p. 258).

The organisation can implement project-friendly policies, for example to allow for effective budgeting and procurement processes during the pre-project, planning and execution phases. Changing existing policies and implementing new ones can take months, or even years, to realise and may only serve as a long-term solution for the PM discipline in the organisation.

6.0 Concluding summary

Organisations depend on the IT department to provide the appropriate tools, mechanisms, services and means to successfully conduct business in the financial sector of the Republic of South Africa. This aim is achieved through the deployment and maintenance of ICT solutions. The Bank is seen as a leader and mentor in countries of the Southern African Development Community (SADC) and others in Africa.
This dependence on ICT solutions awards major responsibilities to the IT department in the Bank. Project failures cannot be tolerated if the Bank’s core business can be harmed through these failures. Improving the rate of project success and throughput is therefore a priority for the IT department and the Bank. The aims are achieved by maturing the PM discipline with the introduction of PPM in the Bank. This maturation includes a change in traits, attitude, culture, capabilities, business organisation and approach to business delivery on the side of the staff of the organisation.

No guidance or method is available to the Bank to pro-actively and comprehensively identify those areas that can render a project unsuccessful. Risk management in projects was one of the areas that were neglected because of lack of guidance, resources and procedures. Although a PSO was established in 2003, no qualified project risk managers specialise in PM in the organisation.

Using a fixed, systematic approach to identifying and dealing with pitfalls in the project of establishing a PPM discipline greatly reduces the risks of the project not being implemented successfully.

This paper described the concepts of PM and PPM as well as a background of PM in the Bank. The anatomy of a pitfall and the categorisation of pitfall types aimed at simplifying pitfall identification. Assessment, prioritisation of, and responses to pitfalls, as well as the monitoring and controls to minimise the number, probability and impact of pitfalls were discussed. The paper then reported on project stakeholders’ reaction to the provided pitfall checklists and their opinion on the prioritisation, assessment and response to identified pitfalls.

The pitfall checklist acquired from this study identified high-level pitfalls, and response plans were made available to the project team for introduction into the project risk register.

Finally, recommendations were made about implementing controls to address many of the pitfalls identified as possibly present during the implementation project (see paragraph 6.2.5). Although not all of the controls will have a short-term benefit, the organisation can use these controls to enhance the maturity of PM in general.
By following a structured approach to identifying and managing pitfalls during ICT projects, project managers are able to not only develop a better understanding of the technical demands and complexity of the project and other hard issues that influence the project but also identify and address the soft issues that may normally be hidden or interpreted incorrectly and that have the potential to undermine the cohesion and productivity of the project team. Through experience, trust and good communication, the project manager can address these issues as soon as conditions triggering pitfalls arise, increasing the possibility of completing the project successfully.

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