IMPLEMENTING AN INFORMATION TECHNOLOGY PROJECT RISK MANAGEMENT INITIATIVE – A CASE STUDY

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ABSTRACT

This article focuses on the implementation of IT Project Risk Management during the course of a proof-of-concept implementation of an electronic document management system (EDMS) for a large petro-chemical company in South Africa. The article starts off with a high-level overview of the project followed by the steps taken to progress the project risk management initiative from idea, to implementation, to use. The following section focuses on the closing phase of the project with some lessons learnt and conclusions by the author.

1. INTRODUCTION

Several studies, most notably the CHAOS chronicles, state that the majority of IT projects are challenged or unsuccessful. There has been a marked improvement from the 1996 report to the 1998 report to the 2001 report. The improvement, however, is not yet satisfactory, as the number of failures still outweigh the successes. Despite this, most organisations are forced to embark on these risky endeavours. It therefore makes sense that project risk management should be a high priority for anyone involved in IT projects.

The first major hurdle is usually convincing the project sponsor to invest money in project risk management, as it is, in most cases, very difficult to show the expected return on investment (ROI). Even if the project sponsor is convinced of its worth and supports the initiative, it guarantees neither success, nor a smooth ride.

This article focuses on the implementation of IT Project Risk Management during the course of a proof-of-concept implementation of an electronic document management system (EDMS) for a large petro-chemical company in South Africa. The article begins with a high-level overview of the project, while the second section covers the steps taken to progress the project risk management initiative from idea, to implementation, to use. The third section focuses on the closing phase of the project, followed by some lessons learnt and conclusions by the author.

2. PROJECT BACKGROUND

The project was undertaken by a large holding company that consisted of various subsidiaries that had functioned autonomously for several years. Each subsidiary has evolved over time, creating unique cultures and business practices. The main purpose of the proof-of-concept project was to implement the EDMS so that the various subsidiaries could store documents electronically and, therefore, share knowledge.
The project consisted of several sub-projects including business blueprint, technical blueprint, risk management, quality management and change management. Each of these sub-projects were headed up by sub-project managers that were supported by a sub-project team. The overall project involved 40 people and was worth R15m.

The company had a central project office where all projects had to be registered and followed proven project management practices. A senior manager was appointed as project sponsor. A standard project proposal was done based on the identified need for an EDMS. This was followed by a project initiation document that signalled the official start of the project.

A project manager was appointed and a project team was assembled with roles and responsibilities being identified and defined. The project manager was committed full-time to the project and had one assistant that managed the project office.

The one area where there seemed to be a complete lack of processes, procedures and infrastructure, however, was the area of project risk management.

The rest of this article focuses on the development and implementation of this project risk management initiative.

3. PROJECT RISK MANAGEMENT IMPLEMENTATION

The phases that were implemented included:
- Phase 1 - Establish the initiative
- Phase 2 - Develop a project risk management plan
- Phase 3 - Develop a standard process
- Phase 4 - Implement the project management infrastructure
- Phase 5 - Perform project risk management

Each of these phases is discussed in more detail below.

3.1 Phase 1 - Establish the initiative

The project sponsor felt that by their very nature, proof-of-concept projects are rather risky. The fact that this was an information technology project exacerbated the risk. The need for project risk management was, therefore, very strong. There were other factors that contributed to this need:
- There were several stakeholders involved, many of whom were external to the organisation.
- The IT function had been outsourced to another company which created severe resistance to any IT initiatives by users, as many people had been retrenched.
- The vendor of the EDMS was internationally based with very limited representation in South Africa.

The first problem in terms of project risk management was that nobody, not even the appointed project manager, had sufficient expertise or experience in this field. An independent consultancy was brought in to provide this service. One of the main difficulties resulting from bringing in an external team was that the rest of the team did not perceive them to be “part of the project”. It takes time for team members to get to know one another and to establish rapport. The external team, on the other hand, did not have any authority over fellow team members and could therefore not enforce any recommendations or decisions.

The most important aspect of establishing the initiative is that it should, ideally, be done before the project starts.
3.2 Phase 2 - Develop a project risk management plan

After the appointment of the consultancy they set about developing a sub-project plan for the development and implementation of a project risk management initiative. This included all the normal project management activities such as WBS, scheduling, budgeting and staffing. After the approval of this sub-project plan, the PRM team could start with the development of a standard process.

The most important aspect of developing a project risk management plan is to ensure that the project sponsors' expectations in terms of risk management deliverables are well understood.

3.3 Phase 3 - Develop a standard process

Two processes were developed for the project. The first included a Project Success Potential Scoring Sheet that would provide a quick indication of the level of risk facing the project. This would assist the project sponsor in determining the budget that should be made available for managing project risk.

The scoring sheet contained eight categories that project team members were required to rate on a scale of zero (no risk) to four (high risk). Figure 1 below presents an example of such a scoring sheet.

```
0 1 2 3 4
Skills  ●  ●  ●  ●
Visibility ●  ●  ●  ●
Size     ●  ●  ●  ●
Customer comm. ●  ●  ●  ●
Complexity ●  ●  ●  ●
Technology ●  ●  ●  ●
Structure  ●  ●  ●  ●
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**Figure 1 - Project Success Potential Scoring Sheet**

Each category contained a number of questions that had to be completed by team members. Based on the answers to these questions, a single value for the category was calculated. The average of all team member responses were then mapped onto the scoring sheet as shown in figure 1 above. On this project, it was decided that any value above three would be unacceptable to the project.

A spreadsheet model was used that contained all the questions and, based on the responses, would automatically calculate the project risk profile.

The second process was to assess and manage the risk on a continuous basis and consisted of a risk analysis phase and a risk management phase.
3.3.1 Identify risk
Different techniques were used to identify risk ranging from risk identification workshops to personal interviews and questionnaires to document analysis. It became clear that no single techniques would be able to provide all the necessary risks.

Part of risk identification was also to identify a risk owner that would be responsible for monitoring the risk as well as address it by means of the risk action plan. This proved a difficult task as nobody wanted additional responsibilities.

3.3.2 Analyse, quantify and assess risk
For risk analysis, six risk measures were used to calculate the risk value for any given risk. The risk owners were interviewed as it was thought that they would have the best understanding of the risks. The risk measures were measured on a five point scale ranging from 0 – 4. The risk measures were:

- Impact – measured as a percentage range on either time, cost or project objectives
- Probability – measured qualitatively as being between impossible and definite
- Performance – measured in terms of the amount of effort it would take to address the risk
- Growth – measured in terms of whether the risk would disappear or worsen if left unattended
- Urgency – measured in time when risk mitigation should be done to be effective
- Capacity – measured in available resources to address the risk

The result from this phase was a risk profile for the project that showed where the major problems were.

3.3.3 Plan risk response
Once risk values had been calculated, responses to the risks had to be developed. This was done in conjunction with the risk owners as they had to take ownership of these plans and implement them. This phase required the following actions:
- decide on risk strategy to follow (accept, avoid, transfer, manage)
- select risk reduction measure to address risk (mitigation plans, contingency plans and contingency reserves)
- identify person to execute risk reduction measure (risk owner, project manager, project sponsor)
- determine cost, time and resources associated with risk reduction measure
- record risk status (identified, analysed, risk response planned, being implemented, resolved) establish implementation/completion date for risk reduction measure/s

During the project progress meetings, risk owners had to give feedback about how they were doing in terms of their risk action plans.

3.3.4 Carry out risk reduction measures
During this phase the risk owners had to implement the risk action plans and track the effect they had on the identified risks. If the desired results were not achieved, alternative risk action plans had to be developed.

3.3.5 Update risk profiles
It was the responsibility of the risk owners to provide the risk team with weekly updates on any changes that would affect the risk profiles.

This process was repeated on a fortnightly basis until the end of the project. Figure 3 below is an illustration of how the Project Risk Management process related to the rest of the project.

![Figure 3 – Cyclical nature of the Project Risk Management process](image_url)

During every project progress meeting a top-ten list of risks would be presented and discussed. Many of the risks on this list affected everyone.

Once the processes had been developed and submitted for approval, the first major quandary developed. Not all the users were satisfied with the proposed approach. One group in particular, made up mostly of chemical engineers, felt the process was not quantitative enough. This was understandable as the field of chemical engineering is based on precision measurement and control. They found it difficult to think outside this mindset and evaluate the semi-qualitative project risk management process according to what it was supposed to achieve. It took many hours of explanation and debate before they reluctantly accepted the process. During the project they did not seem to have too much faith in the results delivered.

3.4 Phase 4 - Implement the project management infrastructure
Once the process was accepted, it could be implemented. A project risk management policy was drafted and circulated to those involved. Everyone now knew they had the responsibility of managing the risks in their area. A short training course was developed and presented after the first monthly project progress review meeting. By linking it to the compulsory meeting, it was ensured that most of the people would be there.
Initially, a sophisticated spreadsheet model was developed to manage and track risks. During the project, work started on the development of a risk database prototype that would contain some of the knowledge and intelligence added by the project risk management consultants.

3.5 Phase 5 - Perform project risk management
After the training, meetings were scheduled with everyone involved to begin with risk identification. Different techniques were used to obtain the necessary information ranging from workshops and questionnaires to interviews and document analysis. Project risk progress reports were submitted fortnightly with a major feedback session during the monthly progress review meetings.

Weekly top-ten risk lists were distributed to all so that everyone knew where the problems were that required immediate attention.

The risk management process was repeated on a fortnightly basis to make sure that new risks could be identified timeously. As soon as a risk was identified, the control measures had to be defined, followed by an action plan of how it would be implemented. The risk management process was repeated several times up to the end of the project.

4. PROJECT CLOSING

The project was completed marginally over budget but was delayed by three months. The reason for this was that one original specification was not documented. The specification was that all designs and architectures had to be audited by an independent auditor. On completion of the project and during the final project closing meeting, the project sponsor wanted to see the audit report before final sign-off.

As the project audit had not yet been done, despite the system being up and running according the specified performance criteria, the project sponsor would not give final sign-off. It took three months to get an auditor from abroad to visit South Africa just to do the audit, which lasted one week. With the audit report included in the final project documentation, another project closing meeting was scheduled. This time the project sponsor was happy and final sign-off took place.

The project was considered a success and phase two was initiated, which consisted of the enterprise-wide roll-out of the EDMS.

5. CONCLUSION

Many valuable lessons were learnt from this project.

1. The risk management infrastructure should ideally be implemented before the project starts. Valuable time passed as the project started and progressed while the project risk management process was being developed and implemented. If the risk management process was used from the start, the missing requirements that caused a serious delay might have been picked up and, therefore, avoided.

2. It is crucial that everyone on the project team, including users, buy into the risk management process. As the project sponsor did not have any direct authority over the chemical engineering subsidiary, there was nothing that could be done to force them to accept the project risk management process. It look many man-hours to get their buy-in although they never really contributed to the process. During project progress meetings they questioned the validity of many of the identified risks.
3. Project risk management must be driven from the top. The need for risk management came from the project sponsor and the project manager. This ensured that a budget was made available for project risk management.

4. A proven project risk management tool is essential for administrating and managing risks. The risk database prototype was abandoned after it became clear that it would take substantial investment to have all the necessary features built in. For the same cost, one of the many existing project risk management packages on the market could have been purchased. For this project, the use of the spreadsheet model was sufficient and helped to keep costs down. It was, however, recommended, that the company invest in such a package as the cost could easily be spread across the various projects being done at the same time.

5. Everyone is responsible for project risk management. It is not just the responsibility of the project risk manager. It took some time to change the perception of the team members as many felt that having a project risk manager on the project meant they did not have to worry about it any more. Again, a lot of time was spent changing this perception.

The project was completed successfully and it is the author’s opinion that the project risk management process made a significant contribution towards this success.

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Prof Labuschagne has been presenting IT Project Management as postgraduate, distance education and extra curricular courses for almost 4 years. He is the external examiner and moderator for several other project management related subjects at other tertiary institutions. He is both a member of the Project Management Institute (PMI) and the Project Management Institute of South Africa (PMISA).

Before re-entering the world of academia - this time as a senior lecturer at RAU in 1998 - Prof. Labuschagne engaged in industry consultation to various corporates in South Africa. Recently he was involved in performing project risk management for the enterprise-wide implementation of an electronic document management system (EDMS) for a large petro-chemical company in South Africa.