

Project Reviews

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The scope and impact of ICT projects are increasing rapidly. Good examples are the many extensive e-Business projects that have been initiated during the past year under considerable time pressure. The future of many organisations now depends upon the success of their ICT projects; proper control is therefore indispensable.

Introduction

ICT projects are often very complex and difficult to manage. A substantial amount of professional literature has been written on project management and on the pitfalls and the success factors of such projects, including a number of articles in Compact [e.g. Hest99, Boer97 and Brun93]. Project audits are carried out as part of the control of an ICT project. In a project audit, an inventory is drawn up of the risks of the ICT project and recommendations are made about potential controlling measures. In addition, learning points for a subsequent project can be identified. Project audits may take place only once or at several stages during a project. In the latter case, reference is made to a Quality Assurance role within a project.

Partly based on case studies, this article deals with the Project Review framework that KPMG employs internationally for the evaluation of the design and the control of ICT projects.

The primary purpose of the Project Review is to provide (senior) management with an objective and independent assessment of the inherent risks of an ICT project. By also establishing the effectiveness of controls planned or implemented to reduce risks, (senior) management is able to carry out control measures geared to their projects. Clearly, a project is more likely to succeed if the risks are effectively controlled. The Project Review framework should help to identify unsuccessful projects so that appropriate action can be taken to improve performance levels with a minimum effort.

The framework provides:

- * a general and consistent approach for the review of risks and controls associated with projects;
- * a framework for advising organisations on the controls required to reduce project risks and maximise the project's chances of meeting its objectives;
- * a framework for providing management and administrators with a high level of assurance as regards the effectiveness of project management controls.

The Project Review framework is part of the international Project Risk Management methodology of KPMG Information Risk Management. The Project Risk Management Framework constitutes a system of

services. These services are subdivided into Project Diagnoses, which include Project Reviews, Project Assistance and Data Quality. Project Assistance includes support that concerns the actual performance level of an ICT project, such as project and programme management, support in package selections and test management. Data Quality concerns the support of an organisation's data migration and conversion paths.

A description of the Project Review framework is given below. The application of the Project Review framework is subsequently dealt with, as well as the way in which a Project Review investigation is carried out. Finally, an example is given of how the Project Review framework is applied in practice.

Structure of the Project Review framework

Projects involve specific risks and may require specialised managing skills, but they also require interaction with the existing business. The Project Review Framework and template are therefore organised as four project resource attention areas:

- * business process;
- * people;
- * technology;
- * data.

Case

International retailer, 'going live' Project Review

An international retailer was on the eve of implementing a new back-office system for the outlets. A project team spent more than a year developing the system which had to be implemented at more than 150 locations. An implementation plan was drawn up for the transition per outlet from the old to the new system. KPMG IRM performed a pre-implementation Project Review to determine whether the organisation was ready for such a transition. The Project Review resulted in a No-Go. Because of the many outstanding problems, the risks were too substantial to 'go live' at that time. After the observed bottlenecks were removed, the organisation proceeded with the implementation of the system a few months later, following a go from KPMG IRM.

These four resource areas should be coordinated in such a way that they yield a project result in line with the business focus, representing key considerations for any project (the fifth area of consideration).

To manage this process and keep interference in the existing business to a minimum, a project management layer (the sixth area of consideration) is inserted between the business focus and the available resources. Once the project is completed, the project management layer can be removed, leaving the business to continue as usual.

The framework supports the assessment of the inherent risks and of the effectiveness of operational controls for each of these attention areas. This allows the reviewer to assess whether risks have been effectively covered by controls, and thus evaluate and report on the residual risks.

The structure of the framework is illustrated in figure 1.

Business focus

This component aims to ensure that the project includes a business case and is endorsed by management. Without sufficient focus from the business, an increased risk of project cancellation exists, either because of altered business requirements or a change in management. Throughout the project, the business case should be regularly reconsidered in order to account for changes in business requirements.

Project management

The project management component is concerned with whether the procedures to set up, manage and control the project, are adequate. If the project is not well managed it may utilise resources inefficiently or fail to yield results within the agreed timeframe. Many project management controls are repetitive and are relevant to all project phases. An optional component on programme management is also included, to be applied when more than one project is established within the programme to deliver the overall solution.

Business process

This component addresses the activities concerning the restructuring of business processes that result from the project. By formulating questions, weaknesses in the identification, planning and management of the business process changes are identified. An ICT system is not isolated from business processes, so if these are not taken into consideration, the implementation of the new system may be faced with difficulties.

People

This component concerns the risks and controls involved in the management of organisational change and of training and education requirements. If the needs of the people who are affected by the implementation of the ICT project are not considered, they may oppose or be insufficiently trained to cope

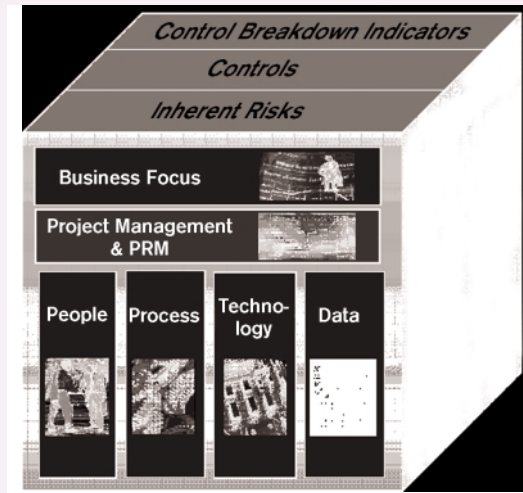


Figure 1. Project Review: structure of the framework.

with the development and implementation of the system.

Technology

The technology component addresses the risks and controls that follow from the introduction of new or upgraded technology. This includes activities that are carried out as part of a package implementation, software development or the setup of technological infrastructure. The project change control process is also included here. If these are not taken into consideration, the technology required to support the ICT system may not be available, hence making it harder to develop and operate the system.

Government agency, Project Review

A Dutch government agency gave a large ICT organisation a contract to replace one of their operational systems by a new system based on modern web and database technology. The preliminary path was rather informal and strongly based on mutual confidence. After all, the ICT organisation had been closely involved in the development of the current system and was managing it to everyone's satisfaction. After a few months into the development phase, after budgets and plans had been repeatedly modified and after a number of difficult prototype sessions with the end-users had taken place, confidence in the ICT organisation had been undermined to such an extent that it was decided to stop the project immediately. KPMG IRM was asked to perform a Project Review in order to determine whether the project could be realised within the desired technical environment and, if so, under what conditions. The most important conclusions were that the project was technically feasible, but that the informal project approach pursued was far from ideal and had justifiably led to dissatisfaction among the end-users. Recommendations were subsequently made to professionalise the project organisation of both the ICT organisation and the agency.

Case



Data

This component addresses the risks and controls associated with;

- * analysis of data requirements;
- * introduction of new data types;
- * load of new master data;
- * transfer of data from legacy systems, including the cleanup of existing and historic data.

A correct definition of data requirements and control of data inputs is crucial to the integrity of any technology solution. Questions in this component concern the relevant risks and controls that are required to have the project yield information that is complete, accurate and valid. The amount of time and effort required to prepare data for conversion to a new system is regularly underestimated and is therefore a key component of Project Review.

Appendices to the Project Review attention areas

The Project Review framework also includes a number of appendices for particular ICT projects, such as for e-Business, the euro and various Enterprise Resource Planning (ERP) packages. Each of these appendices provides a brief description of the project characteristics and lists 'additional considerations' for each of the attention areas already discussed. Also included is a description of the deliverables that can be expected in the various phases of the project and their quality requirements.

Applying the Project Review framework

Given that an organisation may not have previously carried out this type of project and that various political factors may be involved, it is particularly important that the Project Review should be executed with a clear definition in mind of the timing, the final product (report or presentation) and the recipients of the results. For these aspects partly determine the approach and scope of the review.

The pre-implementation review helps the project team, steering committee and Board members to make the final 'Go/No Go' decision.

Level, timing and scope of the project review

The Project Review Framework can be used for both high level and detailed reviews of projects. The scope of the review depends on the scope of the assignment. Additionally, it can be used to assess the project at any stage of its realisation. Some considerations may not be appropriate for some reviews. For example, detailed test plans are unlikely to be available at early stages of the project, whilst blueprints are not as important in the later phases. The project phases are: Definition,

Acquisition/Development, Configuration/Prototyping, Deployment and Evaluation.

The Project Review Framework should therefore be tailored to every project review. Project reviews can be divided into four categories:

- * Initial Project Reviews;
- * Milestone Project Reviews;
- * Business Readiness or Pre-implementation Project Reviews;
- * Post-implementation Project Reviews.

Initial Project Reviews

The Initial Project Review highlights areas of risk and determines the approach to the management of project risks identified for the duration of the project. This review supports the Project Manager through risk assessment. The review can be carried out at any stage of the project and can be repeated when necessary.

Milestone Project Reviews

The Milestone Project Reviews are generally executed immediately after a milestone has been reached. They are meant to determine whether the phase has been completed correctly, whether the desired deliverables have been produced and whether these include a sufficient level of detail. This review aims to provide added value to the (senior) management or steering committee by determining whether the project proceeds according to set criteria of time, quality and costs. Depending on the nature of the project, one or more milestones may qualify for a Project Milestone Review. In the case of a SAP implementation path, for example, Milestone Project Reviews generally take place after the Business Blueprints and the sub-systems have been completed.

Business Readiness or Pre-implementation Reviews

Business Readiness or Pre-implementation Reviews are generally performed about a month before the ICT system 'goes live' and highlight areas that require attention during the intensive care phase or in future projects. This type of project review helps the Project Manager by identifying 'showstoppers' and by focusing the effort in addressing these issues. They also serve to raise the project steering committee's awareness of the existing risks. A follow-up Business Readiness or Pre-implementation review is generally performed just before the final go-live date to determine whether progress was made on the management of the previously identified risks. On the basis of this assessment, the project team, steering committee and Board members can make the final 'Go/No Go' decision.

Post-implementation Project Review

Post-implementation Project Reviews take place after the implementation date and/or completion of the project. They serve to:

- * provide input on lessons learned;
- * assure the client, third parties (due diligence reviews) or external audit of the overall success or failure of a project;
- * if required in litigation, to provide information on 'failed' projects or unsuccessful implementation. The

recipient of the information needs to be precisely identified, since a comprehensive analysis with supporting documentation is crucial.

Regardless of the review’s scope or timing, we recommend that all areas of attention are covered to obtain completeness. For controls that are yet to be implemented due to the timing of the review, the reviewer should take the intentions of the management into consideration, to determine whether the controls are reasonable. The reviewer may wish to suggest that they return to review the controls once they have been implemented.

Obtaining evidence and reporting findings

There is no prescribed method by which evidence must be obtained or review results must be reported back to the client. However, for this type of work to be of value, it is essential that the work is completed and that results are reported back to the client as quickly as possible. The focus of the evidence and reporting should be on the high-risk areas.

Again it is important to note that evidence should be obtained and findings should be reported with a clear understanding of the timing of the review, the final product (report), the urgency of the assignment and the recipients of the results, as these bear on the approach and scope of the review.

Consequently, reviewers may wish to consider one or more of the following methods of obtaining evidence:

- * interviews;
- * facilitated workshops;
- * review of documentation.

Suggested formats for reporting review results include:

- * presentations;
- * workshops;
- * reports.

Case

Consulting engineering firm, Project Review
 Due to internationalisation and some important changes in the organisational structure, the management decided to implement a new information system. After an intensive investigation of different ERP-systems, they selected one of the market leaders. During the implementation of the system, the project faced major obstacles and the planned date for going live was postponed for several months. Because of the strategic relevance of the project, the management wanted to know if the project team was able to meet the new deadline. KPMG IRM performed a review of the project, which helped the management to acquire an understanding of the risks involved and of the effectiveness of the (planned) controls. KPMG IRM helped to identify the major risks of the project. Furthermore KPMG IRM made recommendations concerning the control of the conclusion of the project.

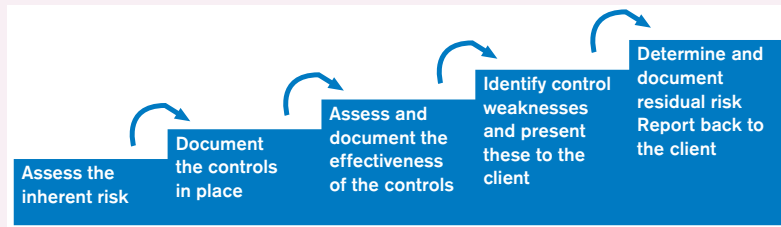


Figure 2. The PR control/risk evaluation process.

Examining Project Review performance

The Project Review examination will be carried out in the following order:

- * background to the Project Review;
- * individual sections on Business Focus, Project Management and sections for each of the four resource attention areas:
 - business process;
 - people;
 - technology;
 - data.
- * summary of the findings and reporting.

Background to the Project Review

The project starts off with collecting background information on the organisation and a project review. This information enables KPMG to place different projects in different categories, based on budget size and industry sector among other things. It is also necessary to determine whether appendices, and if so which appendices, are used within the Project Framework. In this phase a checklist of necessary documentation is used. Such documentation should be acquired prior to all project reviews.

Table 1. Inherent risks for the subject People.

7. People	
Subject/risk	Assessment/comment
7.1 Inherent risks	
7.1.1 Organisational culture	
<p>Is the organisational culture receptive to change and capable of embracing new technology? Consider:</p> <ul style="list-style-type: none"> * the organisational culture is traditional with regard to structure, approach and/or methods; * culture encourages continuous improvement and commitment and responds positively to change; * identification of and reaction to the greatest cultural barriers to change; * social culture. 	<p>For example: High – The business is opposed to and/or critical of change. Low – The business welcomes change and has a history of successful change management.</p>
7.1.2 Goal congruence	
<p>Are function-related and political objectives of senior management likely to interfere with the achievement of business objectives? Consider:</p> <ul style="list-style-type: none"> * political culture; * outsourcing; * task responsibility; * alignment of members of senior management with corporate goals, e.g. linkage between project initiatives and performance targets; * previous success of working together on common objectives; * task responsibility and ownership of information. 	<p>For example: High – Key parties within the project have different objectives and/or are unable to agree on what they want to achieve. Low – All parties are working together to establish common, clearly understood goals.</p>



7. People	
Subject/risk	Assessment/comment
7.2 Controls	
7.2.1 Organisational change	
Definition, Configuration and Deployment phases	
Is organisational change managed effectively?	
Consider:	
<ul style="list-style-type: none"> * the case for organisational change and the organisational change plan are clearly documented and agreed on by project sponsors and business management; * review of impact on working practices, e.g. will staff be required to work different hours?; * gap analysis of current against future skills, positions and competencies; * revision of job descriptions and agreement with management and users; * changes in the skills base requirements and impact on training plan; * related health and safety issues; * HR and unions support the change process; * soft factors are considered, e.g. internal/external politics that may have an effect on the success of the system. 	
7.2.2 Training plan	
Configuration and Deployment phases	
Are staff training needs identified and planned?	
Consider:	
<ul style="list-style-type: none"> * training requirements include: user skills, technical skills, change education, competency skills and system skills as required; * completion of a skills assessment to identify training needs now and in the future for all staff; * review of training plan based on skills assessment, with key dates, dependencies and resource needs identified; * development of a training strategy for efficient and appropriate training of all staff; * training facilities booked and confirmed. 	
7.2.3 User and operational training	
Configuration and Deployment phases	
Is an effective training environment available?	
Consider:	
<ul style="list-style-type: none"> * specification of training environment, including system requirements, documentation etc; * administration details, e.g. room bookings, allocated trainers and delivery dates are agreed on and recommended; * training materials have been prepared and distributed; * configuration management procedures to control the training environment are established; * users and operational staff are trained in the use of the new system and related processes; * processes to address issues that result from the training in order to ensure continuous improvement, e.g. common problems that require changes to the training or functional specification; * users and operational staff are trained to recognise the importance of complete and accurate capture and maintenance of business data/information; * integration of specialist skills, e.g. contractors, in the organisation. 	

Table 2. The effectiveness of controls for the subject People.

Project resource considerations

For each of the subjects – Business Focus, Project Management, Business Processes, People, Technology and Data – the process illustrated in figure 2 should be adhered to.

Assess the inherent risk

Before starting a review, the reviewer should consider and assess the risk inherent in each subject, i.e. the risk that exists before any controls are implemented. The inherent risk of a project is partially determined by the nature of the business and the type of technology that is used. Reviewers should always consider whether project or business specific circumstances, such as outsourcing, create extra inherent risks beyond those outlined in the framework. Additionally, reviewers should remember that inherent risk considerations outlined in one section of the framework may also apply to other sections.

The primary purpose of the inherent risk assessment is to focus on major risk areas, so the inherent risk areas should be ranked according to their degree of significance.

Example: the inherent risks shown in table 1 should be considered for the subject People, which includes the management of organisational change as well as training and education requirements.

For each subject, the inherent risk should be qualified as high, medium or low and be documented, with a commentary included. The information required to assess inherent risk consists of information gathered from meetings with members of staff, the consideration of the scale and complexity of the task, knowledge of the system that is implemented and the reviewer's experience. Note that once the review commences, the reviewer may wish to revise his assessment of inherent risk in the light of additional information obtained during the review.

Document the controls in place

The controls in place should then be documented in the 'Assessment/comment' column. Supplementary documentation or papers may be included as references. Information on controls is obtained through interviews and review of documentation.

Assess and document the effectiveness of controls

Once the inherent risks and the controls in place are identified, the effectiveness of the specific controls is qualified for each subject as compared with the overall risk inherent in the subject. Each section contains a number of project control questions, which seek to confirm that standard project controls have been applied. Information on how to address these high-level questions is provided by way of various points of consideration in each of the control questions.

Example: in table 2 the effectiveness of controls is considered for the subject People.

As mentioned before, there are appendices to the Project Review attention areas. These can relate to any of the specific Project Review subject sections, but approach it from a different angle: a section on e-Business developments, for example. Such a section would include suggested controls that apply to an e-Business-related project.

An evaluation (high, medium or low), together with comments on the effectiveness of the controls identified, should be documented in the column headed 'Assessment/comment'. If a control is not yet in place, the design of the intended control should be reviewed to determine whether it will be appropriate.

Identify control weaknesses

At this stage, the IRM specialist will have identified and evaluated the controls in operation and will therefore be in a position to identify the control weaknesses that contribute to a high residual risk for any particular subject.

Example: table 3 illustrates the risk profile that has been produced for the subject People.

7. People	
Subject/risk	Rating
7.1 Inherent risk (overall)	High
7.1.1 Organisational culture	High
7.1.2 Goal congruence	Medium
7.2 Control effectiveness (overall)	Low
7.2.1 Organisational change	Low
7.2.2 Training plan	Low
7.2.3 User and operational training	Medium
Residual risk for subject	High

Table 3. The risk profile that has been produced for the subject People.

In this example, the overall inherent risk of the subject People has been assessed as high. This is primarily because the organisation is considered to be against change. Additionally, the parties involved in the project do not appear to be completely focused on a single goal.

The effectiveness of the controls over the 'organisational change' area is assessed as long as the business has yet to obtain union support for the proposed changes in work practices. The 'training plan' area has been assessed as 'low' since the business has still to complete an assessment of who will require training. However, good progress has been made with the set-up of the infrastructure required to carry out the training. 'User and operations training' is therefore assessed as 'medium'.

In this case the overall effectiveness of controls for the subject People has been assessed as 'low'. A balanced judgment is required to make this assessment because some controls may be more effective than others and a calculated average may not correctly represent the effectiveness of the controls.

Comparing the overall rating for control effectiveness to that for inherent risk, we calculate that there is a 'high' residual risk for this subject. Consequently the subject People will be a high priority issue for this client. Our work should allow us to identify the controls that need to be enhanced to improve this

score, so that we can provide recommendations to the client.

Assess and document residual risk and report back to client

Once the inherent risks have been considered and assessed, and controls have been documented, the controls should be evaluated in order to determine how effectively they control the inherent risks. In this way the controls can be reviewed in the context of existing risk and the level of any residual risk can be identified.

Euro project at a health care insurance company, Initial Project review

An insurance company is in the middle of an extensive project with which to make all systems Euro-compliant and to guarantee a smooth transition to the Euro. Both the steering committee and project management are under the impression that the project is going well. In view of the importance of the project for the organisation, they want additional assurance that they 'haven't missed anything'. KPMG IRM is asked to regularly perform Project Reviews on the Euro project, the results of which are presented to the project management and the steering committee. So far, the results of the Project Reviews have induced some adjustments to the project.

Case

Integration project of local authorities, Project Review

Several local authorities started an ambitious integration project involving a number of disparate systems used by different authorities. Its main objective being the creation of a single organisation. KPMG IRM was asked to review a project that had been faced with a number of setbacks. KPMG's review pinpointed key issues that put the success of the project at risk. KPMG assisted the project team and helped to bring the project back on course. Ultimately, the project team were able to complete the project successfully without much external assistance.

Case

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Conclusion

The overall functioning of an organisation increasingly depends on the success of its ICT projects; project reviews can help management to control the risks involved. Clearly, a project is more likely to succeed if the risks are effectively controlled. The Project Review framework offers a structured method to assess the control of project risks. The Project Review framework helps to identify projects that are found wanting, so that appropriate measures can be taken to restore them with a minimum investment of time or money.

Previous experience with project reviews shows that organisations are very satisfied and enthusiastic and that project reviews make an important contribution to the control of projects. At the start, a Project Review is often perceived as annoying by project managers. However, during the course of the investigation they generally respond enthusiastically to an independent evaluation of the control of the project risks and to recommendations for improvement.

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Clearly, a project is more likely to succeed if the risks are effectively controlled.