A Case Study of One Project

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All names of places, organisations and individuals mentioned in this case study in relation to the project have been changed intentionally.

1. Introduction to the project

The Old Cemetery Restoration Project was originally developed by the Friends of the Old Cemetery Group (FOCG), Old Town Social Heritage Group (OTSHG) and Cllr Rob Johnson representing Old Town ward in the Local Authority (the Council). The project followed a feasibility study on the replacement of the badly dilapidated East Road boundary fence of the Old Cemetery with period iron railings which had been removed for the World War II effort. On investigating funding routes, a decision was taken to enlarge the project to include other elements of the cemetery, such as three chapels, the Bothey store and selected monuments, as well as providing training and educational programmes to support local interest groups and volunteers. As a body responsible for the Old Cemetery, the Council agreed to become a 'parent organisation' for the project and submitted a bid for funding to the Heritage Lottery Fund (HLF).

In October 2006, the Council was awarded an HLF grant. The project was due to commence in September 2007 with the completion date of 31 March 2009. The original budget to deliver the approved purposes contained within the bid to the HLF was £574,191. HLF grant funding of £486,000 was approved and, at 85% of the total project value, was the maximum allowable by the HLF. The Council undertook to contribute the remaining 15% of the total project value.

There were delays in developing specifications for the building and restoration works followed by the delays in the planning and tendering processes. In early 2009, tenders for building and restoration works to deliver this project were returned in excess of 50% of the original budget. A value re-engineering exercise was undertaken in May 2009 in consultation with the HLF. The resulting returns on the reduced Bill of Quantities ranged from £50,000 to £80,000 over the original budget for capital works. Together with the re-adjusted professional fees for delivery of the project, this created a funding gap of £70,000. Due to the nature of strictly regulated conservation and restoration work, it was not possible to reduce the cost further.

In July 2009, the Council agreed to increase its capital contribution by a further £70,000. A new completion date (30 September 2010) for this project was negotiated with the HLF and building and restoration work finally commenced in January 2010.

2. Analysis of the project strategy

For the purposes of this case study, a project strategy is defined as a '*dir*ection in a project that contributes to the *success* of the project in its environment' (Artto *et al.,* 2008).

A new framework for critical success/failure factors in projects (Belassi and Tukel, 1996) informed the analysis of the project strategy.

2.1. Project Integration Management

At the time of the development of this project, the Council was a very immature organisation in terms of project management. Until March 2008, the Council had no Programme and Project Management Policy. Member or officer delegated decisions were used to secure agreements and Council's funding to start projects. Project integration management practice was inconsistent across the organisation as it was dependent on the previous experience, knowledge and skills of people appointed to be project managers.

The Old Cemetery Restoration Project was different in this respect because the HLF bid documentation provided a framework for its project integration management. It included:
- project scope (a statement of approved purposes);
- project plan (outlines project objectives, general approach, schedules, budget and other resources required for the project and the initial risk assessment);
- execution process with key milestones and deliverables;
- monitoring and control framework including integrated change control arrangements;
- risk management framework;
- project close-down arrangements.

However, the HLF bid documentation had no requirement to develop the Work Breakdown Structure (WBS) or define the project organisational structure, external interfaces, internal structure, roles and responsibilities. There was also no project communications plan. These gaps created serious problems in the delivery of the project.

2.2. Project Scope Management

The Project Management Body of Knowledge (PMBOK) defines project scope management as the processes required to ensure that the project includes all the work required, and only the work required, to complete the project successfully.

As Meredith and Mantel (2010) pointed out, even if the project scope was carefully defined from the start, it is almost certain to be changed by the end of the project due to its being a subject of considerable uncertainty.

On the high level, the scope of the Old Cemetery restoration project was 'fixed' through the conditions of the HLF grant as the statement of approved purposes for this project which defined all and only work covered by the grant and, therefore, included in the project. However, in the absence of a well-formed Work Breakdown Structure (WBS) it was impossible to accurately estimate the project costs and create a realistic project schedule. Very soon it became evident that the project could not be delivered in 18 months. When the WBS for the project was created and the critical path identified, it became evident that the duration of the project should be at least 22 months from start to finish.

By early 2009, critical success/failure factors related to the external environment of the project (Belassi and Tukel, 1996) came into play. The tendering process revealed that, since the development of the project proposal in 2006, the construction industry and financial markets had altered significantly, both nationally and locally. This resulted in a significant differences between the original budget and the actual cost of the capital restoration works itemised within the approved purposes. Due to the nature of strictly regulated conservation and restoration work, the project had a very limited ability to reduce the cost of capital works.

Trade-offs between the scope, time and cost had to be made in order to deliver this project. A value re-engineering exercise was undertaken and a 'fixed' reduced project scope and a new completion date were formally agreed with the HLF in October 2009.

2.3. Project Time Management

As stated earlier, the original time estimates for this project proved to be inaccurate. The Old Cemetery Restoration was a complex, but fairly routine project with minimal uncertainty in the project completion time. Therefore, when this project was reviewed in early 2009, a Critical Path Method (CPM) was used to plan and time manage all tasks that had to be completed as part of the project.

This method helped to provide a graphical view of the project, predict the time to complete the project and to show which activities were critical to maintaining the schedule and which were not.

This method also allowed a more precise assessment of:
- where parallel tasks could be undertaken;
- resources required to execute the project; and
- the sequence of activities, scheduling and timings involved.

The use of the CPM made an important contribution to the recovery of the project which was back on track to be delivered to agreed specification, on time and within the budget.

2.4. Project Cost Management

The project cost management processes included resource planning, cost estimating, cost budgeting, cost control and change control.

When the project was developed in 2006, resource planning and cost estimates reflected the desire of the project group to secure the HLF grant rather then to ensure that the project had sufficient resources and was deliverable. The project group made estimates of overall project costs and the costs of the main activities and deliverables based on the quotes for generic building works. At this stage, two critical success/failure factors related to the project itself and to a project management (Belassi and Tukel, 1996) led to inadequacy of preliminary estimates in terms of cost and time. These factors were: the uniqueness of project activity, namely, conservation and restoration work; and the lack of a technical background within the project team.

Unfortunately, once the original bid was approved by the HLF, the estimated project costs (as well as the scope and time variables) became 'fixed' by the conditions of the grant. In addition to this, key stakeholders also held all three constraints as important and practically unchangeable.

As Meredith and Mantel (2010) pointed out, when all three variables – time, cost, specifications – are fixed, the system is 'over-determined' and the project manager loses all flexibility to perform the trade-offs required for the successful completion of the project.

In order to address this problem, the project team had to re-negotiate the ranking of the cost, time and scope constraints with the key stakeholders. A value re-engineering exercise, WBS and detailed budget were completed and used to develop a change request with the new project scope and project completion date. This was subsequently approved by the HLF.

For the duration of the building and restoration works, special procedures for instructions to contractors and information were introduced to ensure that: instructions were issued within a delegated authority; instructions were costed and their impact assessed before issue; the instruction was justified in terms of value for money and overall impact on the project; the cost of all instructions was monitored on a continuous basis; and that specific approval was sought and given where costs were forecast to be outside the delegated authority.

Together with the regular (weekly) performance and budget monitoring and control, these measures tightened the cost management arrangements of the project and contributed to its recovery.

2.5. Project Quality Management

Project management is sometimes summarised in a triangle where the three most important factors (also known as constraints) are time, cost and scope, with quality in the centre of the triangle.

Haughey, D. (2008) argued that this had now given way to a project management diamond, with time, cost, scope and quality as the four vertices and customer expectations as the central theme.

This concept highlights the focus of project quality management on improving stakeholders' satisfaction through preventing and avoiding errors rather than measuring and fixing poor quality outputs.

Right from the start of the project, the project team worked to develop a good relationship with key stakeholders such as the HLF (donor) and the beneficiaries of the project, in order to understand what quality means to them. This was particularly important in relation to the HLF, because under the conditions of the grant, it could ask for the return of all or part of the funding if the outputs and/or outcomes of the project were below the required standards.

Following the project review in 2009, quality assurance during the implementation of the project was provided by the Project Board and Stakeholder Overview Board. It included the evaluation of the overall performance of the project on a monthly basis to provide confidence that the project would satisfy the quality standards defined by the HLF and the quality expectations of the key stakeholders. The quality assurance was carried out not only to the building works and services delivered by the project (for example, community learning programme) but also to the process and procedures used to manage the project. This included the way the project used the tools, techniques and methodologies to manage the scope, schedule, budget and quality. The quality assurance of this project also included the project's compliance with the relevant legal and regulatory standards.

This focus on quality is one of the project success criteria captured by both The Iron Triangle and The Square Route concepts (Atkinson, 1999).

Confidence in the project quality management was a crucial factor in securing the HLF approval of the new project scope and the extended project completion date.

2.6. Project Human Resources Management

One of the big problems with this project was related to its human resources management and organisational structure.

Although a full-time project coordinator was appointed at the beginning of the project implementation in 2007, he had no power or authority to manage the project as a whole. His role was limited to maintaining good relationships with the key stakeholders, managing volunteers, co-ordinating research activities and writing progress reports to the HLF. The coordinator had no previous experience of restoration projects and had to learn on the job.

Another officer was appointed on a part-time basis to oversee the project's capital building and restoration works. This officer was a qualified building surveyor with a proven track record of successful management of general building and maintenance works. However, he had no previous experience or understanding of the constraints of the strictly regulated conservation and restoration work and HLF requirements outlined in the conditions of the grant.

All the research work which informed the development of the designs and method statements was undertaken by volunteers and supported by the project co-ordinator.

Neither of the project staff was involved in the development of the project from the start, and no project-specific training was provided to the project staff or to the volunteers.

Up until 2009, the project was 'managed by a committee' (Project Board) comprising:
- representatives of the Friends of the Old Cemetery Group (FOCG) and Old Town Social Heritage Group (OTSHG);
- Cllr Johnson representing the Old Town ward in the Council; and
- two senior officers from the Council (a head of service and a director).

Both, the project coordinator and the building surveyor reported directly to the Project Board on all issues related to the project delivery and received separate instructions and tasks according to their roles in the project.

This organisational structure, project team arrangements, unnecessarily limited roles and responsibilities and lack of technical knowledge resulted in a disjointed and slow delivery of the project at its initial stage. The decision making process was slowed down considerably by the unwillingness of the senior Council's officers to take ownership of the project, by infrequent Project Board meetings (the Board met bi-monthly) and by disagreements between the Board members.

If not addressed, these critical factors related to the parent organisation (the Council) and to the project team members could have significantly reduced chances of the successful delivery of the project. Therefore, during the project review, its organisational structure and governance arrangements were changed to provide clear definitions of roles and responsibilities and to ensure informed, timely and effective decision making.

2.7. Project Communication Management

Effective project communication is essential not only for keeping everyone up to date on the project's progress, but also for facilitating buy-in and ownership of major project decisions and milestones. To ensure the success of a project, information about its key elements and progress should be communicated on a regular basis to all the major stakeholders.

One of the weaknesses of the Old Cemetery Restoration Project at the initial stage of its implementation was poor communication management:

- no stakeholder analysis was undertaken;
- stakeholder information needs were not identified and their concerns were not addressed in an effective and timely manner;
- no project communication plan was developed to cover the life cycle of the project;
- information about the project was shared mainly on an 'if asked' basis;
- there was no communication with the public and local community.

Until 2009, the project communication was limited by the progress reports to the Project Board and to the HLF and by ad hoc presentations to schools and to local interest groups. Project staff were not always fully informed about all aspects of the project. This created confusion, duplication of effort, growing frustration and mistrust between internal and external stakeholders of the project. This also contributed to delays in the development and approval of project designs and method statements essential for the restoration works and lead to the disengagement of many stakeholders.

A project communication plan was developed following the review of the project which covered two-way communication with both internal and external stakeholders of the project.

2.8. Project Risk Management

The Old Cemetery Restoration Project appears to have had a robust risk management framework in place. The initial risk assessment of the project was undertaken as part of the bid for HLF funding and separate risk assessments were conducted for all project activities. The up-to-date risk register for the project was maintained and risk control measures were put in place and monitored on a monthly basis by the staff responsible for project activities and associated risks. Project risk management updates were included in the project progress reports submitted to the Project Board and to the HLF.

Williams (1993) pointed out that an important feature of the risk management is the maintenance of risk data-bases to retain knowledge of where risks can occur. The Council's risk data-base was used to record high level risks associated with the Old Cemetery Restoration Project.

2.9. Project Procurement Management

The Old Cemetery Restoration Project used the Council's procurement process. The procurement rules had been considerably tightened following the recent failure of a major capital project due to its inadequate procurement management.

The new procurement rules made it impossible to specify preferred suppliers of materials required for the project restoration works at the tendering stage. However, this problem was addressed through the value re-engineering exercise, contract negotiations and method statements.

From the beginning of its implementation, the project benefited from advice and assistance provided by the Council's procurement advisers. This helped to avoid potential risks associated with the procurement of capital restoration works for the project.

3. Conclusions and Lessons for the Future

The Old Cemetery Restoration Project was completed in 2009 within the agreed time scale and approved budget. In 2010 in received a Conservation Award and was considered one of the most successful projects delivered by the Council.

This case study of this project highlighted the impact of critical success/failure factors (Belassi and Tukel, 1996) related to the project manager and to the project itself, as well as to the organisation and external environment.

This case study proves that it is vital to prevent and/or address gaps and shortfalls in various aspects of project management as soon as they are identified in order to ensure the success of a project. It also highlighted the need for the whole organisation to embrace the project management body of knowledge, principles and good practice in order to maximise organisational and wider stakeholder community benefits from its projects.

One area where project management tools and techniques might be further applied to achieve an improved overall performance for future projects is related to stakeholders. It is important for the project's success that they are identified and managed correctly.

Artto, K. *et al.* (2008), stated that there are two important determinants in the project's context that effect the strategy of a single project: a project's autonomy in its environment and the complexity of the project's stakeholder environment. They argued that several strong stakeholders in a single project would change radically the assumption that there is

a single parent organisation to serve. This was certainly the case with the Old Cemetery Restoration Project which had to adjust its project strategy to the HLF conditions of grant and to the Council's policies and processes. However, this project had more that just two stakeholders. A number of other parties had an interest in the project and played important roles in its implementation.

A thorough stakeholder analysis should be undertaken to identify all stakeholder groups (both internal and external), their areas of interest, their commitment or resistance to the project and the level of support required by individual groups.

Jepsen and Eskerod (2009) stated that stakeholder analysis in a project should include identification and characterisation of the (important) stakeholders. This should include establishing their needed contributions, their expectations regarding rewards for their contributions and power in relation to the project.

Walley (2010) suggested that Fauvet's theory of socio-dynamics should be used to anticipate a player's role in change and develop strategies of dealing with the most typical behavious.

Follow on this analysis, a stakeholder planning should be used to build support for the project. The stakeholder management plan should be linked to the project communication plan and form an integral part of the effective project communication management .

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