

**AN EXPERIMENT ON THE INTRODUCTION OF SOFTWARE
PROJECT MANAGEMENT TECHNIQUES TO INDUSTRY**

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DECLARATION:

I HEREBY CERTIFY THAT THIS MATERIAL, WHICH I NOW SUBMIT FOR ASSESSMENT ON THE PROGRAMME OF STUDY LEADING TO THE AWARD OF MASTERS OF SCIENCE IS ENTIRELY MY OWN WORK AND HAS NOT BEEN TAKEN FROM THE WORK OF OTHERS SAVE AND TO THE EXTENT THAT SUCH WORK HAS BEEN CITED AND ACKNOWLEDGED WITHIN THE TEXT OF MY WORK.

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A b s t r a c t

The title of this thesis is “An experiment on the introduction of software project management techniques to industry”.

The objective of the experiment is to test the hypothesis that the incidence of project management failure within organisations can be reduced by modifying both the approach to project management training and the method employed to manage projects.

At the start of this experiment, a survey of project management practice within Irish industry was carried out. A beneficial outcome from this survey was the recruitment of a test organisation to participate in the experiment.

The experiment was conducted by executing 8 stages of a test process.

The results from the experiment were as follows :

- **Key Finding 1** – Project management maturity within indigenous companies appears to be low - it would be worthwhile investigating this further to establish if such project management immaturity is typical for Irish industry.
- **Key Finding 2** – Before a software engineering experiment is run in a live environment we should first investigate if there are broader organisational issues (perhaps not directly related to the experiment) which may affect the execution and ultimately the results of the experiment.
- **Key Finding 3** – Experiment results suggest that the test training approach and project management methodology had a positive impact on the test project environment. It would be worthwhile to re-run the experiment on a larger sample size of projects to establish if these results can consistently be obtained across a larger sample group.

- **Key Finding 4** - The lessons to be learned with respect to software engineering experiments in general are as follows :
 - Some experiments can only be properly conducted in a live environment – this can present some difficulties to the person executing the experiment. However, we should view any challenges presented as opportunities to collect potentially valuable data about the test environment; data that might be used in future experiments or indeed to add value to the result of the experiment itself.

And finally –

Factors outside of the experiment made it difficult to properly evaluate the effects of the test training approach and methodology – consequently I would consider the experiment to have only been a partial success. The results however, suggest that it may be beneficial to the project management industry to conduct further work in this area. This may be something to consider for a future date.

Chapter 1

INTRODUCTION

Project management failure is assumed to mean :

- When a project fails to deliver within an approved project timeline
- When a project fails to deliver within an approved project budget
- When a project fails to deliver to an approved level of quality (May 1998)

Industry research indicates that the incidence of project management failure, for companies internationally, has remained fixed at over 50% for the last two decades. A survey undertaken by KPMG in 2002, revealed that of the 134 companies studied, 56% of them had experienced failed projects within the preceding 12 months with an average cost of failure of £8 million (KPMG 2002). Few companies have managed to reach the highest level of project management maturity – characterised by the regular analysis and renewal of existing project management methodologies, the creation of a lessons learned file and a managerial focus on continuous project improvement with processes to improve – and slightly more than half remain at the lowest two levels where project management is used sporadically and standards are not applied appropriately (PWC 2004). The costs associated with project management failure are significant - in 1998, US government and businesses spent approximately \$75 billion on failed software projects and another \$22 billion on budget overruns (Standish Group 1999).

Research indicates that for 2005, project management will be the second highest priority for US corporate IT spending (KnowledgeStorm 2005). It is therefore important, that the high incidence of project management failure is markedly reduced.

The experiment described here was undertaken to test the hypothesis that the incidence of project management failure can be reduced by modifying both the approach to project management training and the method employed to manage projects.

At the start of this experiment a review of project management practice within Irish industry was carried out.

The objective of this review was to gather baseline information regarding the condition of project management practice within indigenous companies and perhaps discover information which might be of value to the experiment.

As a consequence of this review a test organisation was recruited.

To test the hypothesis, an 8 stage test process was defined (refer Fig. 3 - Test Process). This process was used to guide the test organisation and myself through the execution of the experiment.

The output from each of the test process stages is documented within Chapter 5 – The Study. This thesis is divided into six chapters, an overview of which is provided below :

Chapter 1 – Introduction

This chapter defines the objective of the experiment and provides an introduction to the origins of the experiment. It references the path which was taken to recruit the test organisation and the test process applied to execute the experiment. It also gives a baseline overview of the six chapters within this thesis.

Chapter 2 – Literature Review

This chapter discusses the literature referenced during the development of this thesis. It is divided into three main sections :

- Section 1 : Discussion of key terms
- Section 2 : History of project management
- Section 3 : Evidence of project management failure

Chapter 3 – The Method of Investigation

This chapter discusses qualitative and quantitative research and the differences between the two approaches. It discusses the approach to be taken in the execution of the experiment and also other exceptional conditions which need to be considered.

Chapter 4 – The Research Question

This chapter discusses the evolution of the experiment. The original experiment proposed to modify a set of five organisational conditions and test the effect of these modified conditions on the outcome of a test group of projects. These conditions were :

1. Lack of measurement
2. Lack of executive management support for good project management practice
3. Project management methodology selection strategy
4. Project management training style
5. Absence of a Project Management Office (PMO)

However, due to the difficulties of evaluating the specific impact of each of the above issues on the test group of projects, the experiment was reformulated.

Chapter 5 – The Study

This chapter introduces the Test Process employed to execute the experiment.

The Test Process is composed of eight stages.

The execution of each stage, problems encountered and the results are detailed in this chapter.

Chapter 6 – Findings and Conclusions

This chapter discusses the outcome of the experiment and examines the limitations of testing in a live environment.

It also describes the results of the experiment and suggests further opportunity for investigation in the field of project management.

Chapter 2

LITERATURE REVIEW

The objective of this literature review is to present a synopsis of the project management data reviewed in the process of this study.

The review is divided into the following sections :

- Section 1 : Discussion of key terms
- Section 2 : History of project management
- Section 3 : Evidence of project management failure
- Literature Review - Summary

SECTION 1 : DISCUSSION OF KEY TERMS

The interpretation of what constitutes project management; the project management lifecycle and project management failure can occasionally be subjective and ambiguous. Consequently, I feel it necessary to define precisely what I mean by these and other relevant project management terms, before I discuss the execution and results of this experiment.

Project Management.

A method and a set of techniques based on the accepted principles of management used for planning, estimating and controlling work activities to reach a desired end result on-time, within budget and according to specification (Wysocki, Beck, Crane 2002)

Project.

A temporary endeavour undertaken to achieve a unique product or service. Temporary means that every project has a definite beginning and a definite end. Unique means that the product or service is different in some distinguishing way from all other products or services (PMI 2000)

Project Lifecycle.

This lifecycle describes what you need to do the work on the project. Many companies (especially those in software development) *mistakenly* consider this lifecycle and their project management lifecycle to be one and the same. For software development projects, the project lifecycle most usually follows the following format –

- Requirements Analysis
- High-level design
- Detailed design
- Coding
- Testing
- Installation

(Mulcahy 2002)

Project Management Lifecycle.

This lifecycle describes what you need to *manage* and *control* the project.

For example within the Project Management Body of Knowledge (PMBOK), the project management lifecycle follows the five process groups –

- Initiate
- Plan
- Execute
- Monitor and Control
- Close

For small projects these process groups extend across the whole project lifecycle. For larger projects, the project management lifecycle may be repeated for each phase of the project lifecycle (Mulcahy 2002)

Within this thesis, the terms project management methodology; project management lifecycle and project management process refer to the same thing i.e. the process to be followed to manage and control a project.

Project Management Failure.

Generally it is assumed to mean :

- When a project fails to deliver within an approved project timeline
- When a project fails to deliver within an approved project budget
- When a project fails to deliver to an approved level of quality
(May 1998)

However, in the course of my research, I have spoken to companies who have offered alternative project management success/failure definitions which were equally appropriate for their organisation. For example, the primary business driver for one particular software development organisation was to establish themselves in a niche market ahead of their competitors and with a superior quality product.

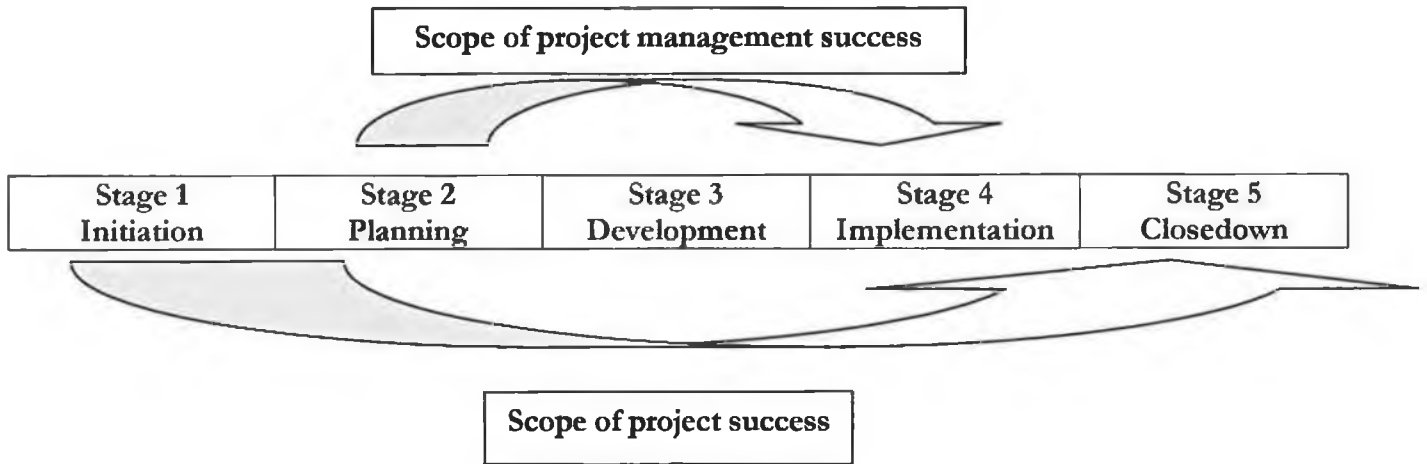
In pursuit of this, the company was supported by financial backers who had very deep pockets – so the definition of project management success put forward by this organisation was : delivery of a high quality product, on time (ahead of their competitors) – the budget was managed but had no obvious limit and therefore was not a variable in the project management “success formula”. The project management control focus for this particular project was the management of time and quality. So, the definition of project management success/failure for an organisation should be built around the time/cost/quality formula but may have some variation depending on the project to which it refers or the business strategy for the organisation.

Project Failure. Generally assumed to mean – failure to deliver the business benefits defined for the project within the Business Case (or equivalent project document). Project Management success and project success cannot be measured using the same criteria. The project management activity is a subset of the wider criteria that identify project success. Therefore the project management activity might be seen to be successful (project delivered on time, within budget and to an acceptable quality standard) but the project might be considered a failure because the business did not obtain an acceptable return on investment from the project. This is because successful projects rely on the alignment and synergy of many disparate components – some being internal to the organisation, such as business strategy, IT strategy and the behaviour of stakeholders within the organisation and others being external to the organisation such as politics, industry regulation and the behaviour of suppliers (Yardley 2002).

In his book “Successful IT project delivery – Learning the lessons of project failure” (Yardley 2002), David Yardley states that the project team and more specifically the project manager, is only involved in a portion of the project and yet is often held responsible for the success of the entire project.

From Fig. 1, we can see that the project team is only involved in stages 2-4 of the overall project, at which point they will leave and most likely move onto another project. Business involvement, however, must span the full lifecycle of the project, namely stages 1-5. The key point to be made here is that overall responsibility for project success, should not necessarily rest with the project manager, but instead with an individual from the business who has a wider view of the project.

Fig. 1 The scope of project management success within the project lifecycle (Yardley 2002)



SECTION 2 : HISTORY OF PROJECT MANAGEMENT

The history of project management is often associated with the construction of the Egyptian Pyramids and the Great Wall of China.

In 1916, Henri Fayol, a French industrialist, presented a management process that consisted of :

- Planning (forecasting)
- Organising (staffing)
- Commanding (motivation)
- Directing (co-ordinating)
- Controlling (monitoring)

This process could be applied to all types of management including the management of projects.

In his book, “Project Management – Planning and Control Techniques” (Burke 2003), Rory Burke states that “nearly all of the special project management techniques used today, were developed during the 1950’s and 1960’s by the US defence-aerospace industry (DoD and NASA). The construction industry also made its contribution through the development of the Critical Path Method (CPM) and the Precedence Diagram Method (PDM), using network diagrams and resource smoothing – the motivation was scheduling urgency and engineering management.

Some of the key achievements during this period are as follows :

- 1950’s – Development of PERT and CPM
- 1950’s – Development of the concept of a single point of responsibility for multi-disciplined projects where one person is made responsible for completing the project. Coupled with this approach came the project team, secondment and resource sharing through a matrix organisation structure.
- 1960 – NASA experiments with matrix organisation structures.
- 1962 – NASA introduces a PERT type system that emphasised the need for cost control and Work Breakdown Structure (WBS).
- 1963 – Earned value adopted by USAF.

- 1963 – Project lifecycle adopted by USAF.
- 1963 – Polaris was the first British project on which the sub-contractors were required contractually to use advanced project management systems.
- 1964 – Configuration management adopted by NASA to review and document proposed changes.
- 1965 – DoD and NASA move from cost plus contracts towards incentive type contracts such as firm fixed price or cost plus incentive fee.
- 1965 – The mid 1960's saw a dramatic rise in the number of construction industry projects that used modern project management techniques.
- 1965 – The TSR-2 (swing-wing bomber) highlighted the problems of concurrency – i.e. starting development and production before a design is stable. Increasing the scope of work led to cost overruns and delays – eventually the project was scrapped.
- 1966 – A report in 1966 stated that not enough time was spent on front-end definition and preparation of the project lifecycle; there were wide variations in standards of cost and schedule control and inadequate control over design changes.
- 1967 – International Project Management Association (IPMA) founded – grouping of over 20 international associations.
- 1969 – Project Management Institute (PMI) formed – certification and PMBOK (1987,1996,2000) were to follow “ (Burke 2003 p16)

One would assume that with such a long history and period of development, the practice of project management would be so well developed that its success rate would be high. In reality however this is not the case, as discussed in Section 3 : Evidence of Project Management Failure.

SECTION 3 : EVIDENCE OF PROJECT MANAGEMENT FAILURE

Irish Statistics

A report in the Sunday Business Post has highlighted that almost 60% of technology projects given priority status by the Irish government in 2002, have yet to be implemented, were not finished on time or have simply been scrapped (Kehoe 2005)

In 2002, the government published the New Connection strategy document outlining what e-government services should be given priority and setting out a definitive timetable for implementation. However, government departments and state bodies have not met the specified targets in 59% of the initiatives. The project types ranged from applying for a driving licence online to an integrated services project for the Department of Health.

The Department of Education was responsible for implementing four e-government projects. Only one of these project have been completed on time whilst a system allowing the payment of student grants on-line and a “further education management information system” have been deferred.

The Department of Foreign Affairs was due to have a facility enabling people to apply for a passport online by the end of 2003. This project has also stalled due to problems with security and electronic signatures.

In 1998 a personnel, payroll and related systems (PPARS) project was sanctioned by the government with a total estimated cost of £9m. This PPARS system was due to deliver a payroll system for 140,000 staff in the health sector and a financial management system (FISP) for the same sector. By 2002 the cost had risen to €17m; a year later to €30m and by 2004 had risen further to €100m. In 2005, the estimate had reached €150m (Harding 2005). Between them, PPARS and FISP have cost €180m and have only been partially deployed. At this stage, it is unclear if the full deployment of either system will ever happen.

An article in PM Network states that Ireland’s National Roads Authority (NRA) projects have comparable problems. They are often over budget, over schedule or both. On average the NRA spend \$150 million per month on projects – on top of this, officials expect the 5 year old transportation project to cost an additional \$9.4 billion by its planned completion in 2008. This brings total costs to \$16.4 billion with 16% of the cost overrun due to inaccurate project costing (PM Network 2005)

International Statistics

In 1984, the Software Engineering Institute (SEI) was established with the objective of defining protocols and methodologies in the field of software development that would assist the United States in keeping a competitive edge in its technological endeavours.

Its initial observations regarding the American software industry were that “the environments (they looked at) lacked an independent ability to perform. Development activities and the resulting products were unpredictable and success or failure was totally dependent on the staff assigned.” (Persse 2001)

A study by the Standish Group in 1994, found that only 16% of application development projects met their definition of success—completed on time, on budget, and with all features/functions originally specified. In 2000, 28% of projects were successful. (Johnson, Boucher, Connors and Robinson 2001)

Standish categorised projects into three resolution types:

Successful: The project is completed on time and on budget, with all features and functions originally specified.

Challenged: The project is completed and operational but over budget, late, and with fewer features and functions than initially specified.

Failed: The project is cancelled before completion, or never implemented.

Tracking U.S. project outcomes (refer Fig. 2 below) showed that in 1994, 28,000 (16%) of projects surveyed were successful, while in 2000, the number rose to 78,000 (28%).

Conversely, failed projects amounted to 54,000 (31%) in the 1994 study vs. 65,000 (23%) in the 2000 study. This was an 18% increase, while overall project growth exceeded 60%.

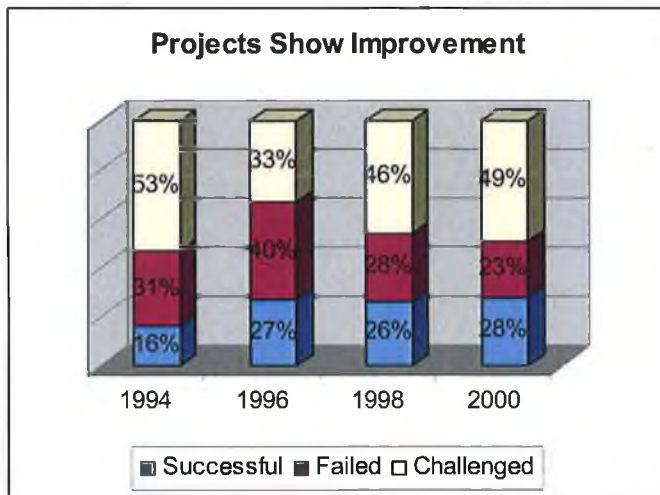


Fig. 2 Projects show improvement between 1994-2000

Cost overruns in 1994 were on average 189% over the original estimate. This was reduced to 69% in the 1998 study and down to 45% in the 2000 study. Time overruns dropped from 222% in 1994 to 63% in 2000. The 1994 study found that only 61% of the required features were delivered on challenged projects, compared with 67% in the 2000 study.

The reasons for the increase in successful projects vary. First the average costs of a project have been more than cut in half. Better tools have been created to monitor and control progress and more highly skilled project managers are using improved project management processes. (Johnson, Boucher, Connors and Robinson 2001)

In his book *Death March* (2nd Edition), Ed Yourdon defines a Death March project as one for which “an unbiased objective risk assessment (which includes an assessment of technical risks, personnel risks, legal risks, political risks etc.) determines that the likelihood of failure is > 50%” (Yourdon 2003 p3)

Yourdon claims that “death march projects are the norm, not the exception” (Yourdon 2003 pXVI)

In his book, *Successful IT project delivery*, David Yardley demonstrates the extent and expense of project management failure by citing a number of examples –

Concorde

“The project to build Concorde, the world’s first supersonic commercial aircraft, was wholly sponsored by the British and French governments and was initiated to develop and promote a joint European aerospace industry.

In terms of project management, the Concorde project was a complete failure – the project vastly exceeded its budget and schedule. Taking over 7 years to develop, at a cost of £1.5 billion, the Concorde project was dubbed the most expensive marketing experiment in history. In fact the plane even gave rise to the phrase ‘Concorde fallacy’ – the belief that it is a waste of money to end a project after considerable sums of money have been invested in it.” (Yardley 2002 p14)

TAURUS

The London Stock Exchange TAURUS (Transfer and Automatic Registration of Uncertified Stock) project -

“The original costs for TAURUS were expected to be in the region of £45 million - £50 million.

The benefits case for the project expected a saving to be made in the region of £250 million over a 10-year period. By the end of the project, TAURUS had cost the London Stock Exchange £75 million and the other companies involved between £200-£400 million.

The project returned no financial benefits.

In human terms, the consequences of failure were to be felt throughout the whole project. Most notable was the departure of the Chief Executive of the LSE, who resigned immediately. Soon to follow would be some 220 stock exchange employees and 130 contract staff.” (Yardley 2002 p198)

LITERATURE REVIEW - SUMMARY

The above literature review discusses the history of project management and how it has improved and evolved over the last century. It also defines project management failure and references many examples of failure both nationally and internationally. Of particular significance is the cost of this failure to organisations from a financial and human perspective.

It is evident from this literature review that the improvement in project management practice over recent years has not been accompanied by a parallel improvement in project outcomes. Although project management tools and processes have become more refined and effective and project managers more experienced, there is still a significant incidence of project management failure as demonstrated by the statistics cited in this section. There is a need for more work to be done in this area and the financial benefit of identifying a solution to this problem is clear.

The objective of this experiment is to test the hypothesis that the incidence of project management failure can be reduced by modifying both the approach to project management training and the method employed to manage projects.

The evolution of the experiment is discussed in Chapter 4 : The Research Question.

THE METHOD OF INVESTIGATION

In their paper *Experimental Validation in Software Engineering*, Zelkowitz and Wallace state that “experimentation and data collection are the tools of science for validating theories” (Zelkowitz and Wallace 1997 p1) They discuss a 12-model classification scheme for performing experimentation within the software development domain. A sample of the models discussed in Zelkowitz and Wallace’s paper are given below -

- Basili calls an experiment *in vivo* at a development location or *in vitro* in an isolated controlled setting (e.g. in a laboratory). A project may involve one team of developers or multiple teams and an experiment may involve one project or multiple projects. (Basili 1996)
- Barbara Kitchenham offers alternative definitions for different experiment types:
 - Quantitative Experiments - to identify measurable benefits of using a method or tool
 - Qualitative Experiments – to assess the features provided by a method or tool (e.g. the usability and effectiveness of a required feature; training requirements)
 - Benchmarking – where a number of standard tests are run against alternative technologies in order to assess their relative performance (Kitchenham 1996)

Of all the models discussed in Zelkowitz and Wallace’s paper, Basili’s model is most appropriate to this experiment. Using his classification, this experiment could be categorised as an *in vivo* experiment involving multiple teams and multiple projects.

Categories of research

Studies may be qualitative or quantitative and methodologies vary depending on the nature of the research. Qualitative research is usually conducted in small groups or individually because the intention is to probe for opinions or reactions. Quantitative research requires large sample sizes to validate the findings and usually presents the results with some degree of numerical certainty. (Chandler and Hyatt 2002)

In her book, *Qualitative Researching*, Jennifer Mason states that – “Through qualitative research we can explore a wide variety of dimensions of the social world, including the texture and weave of everyday life, the understandings, experiences and imaginings of our research participants, the ways that social processes, institutions, discourses or relationships work and the significance of the meanings that they generate” (Mason 2002 p1)

Qualitative research differs from quantitative research in a number of ways –

- **Capturing the individuals point of view**

Both qualitative and quantitative researchers are concerned with the individual’s point of view. However, qualitative researchers think they can get closer to the actors perspective through detailed interviewing and observation. They argue that quantitative researchers are seldom able to capture their subject’s perspectives because they have to rely on more remote, empirical methods and procedures.

- **Examining the constraints of everyday life**

Qualitative researchers are more likely to confront the constraints of the everyday world. Quantitative researchers abstract from this world and seldom study it directly.

- **Securing rich descriptions**

Qualitative researchers believe that rich descriptions of the social world are valuable, whereas quantitative researchers are less concerned with such detail. (Mason 2002)

Qualitative researchers use ethnographic prose, life histories, biographical and autobiographical materials among others. Quantitative researchers use mathematical models, statistical tables and graphs and usually write about their research in impersonal, third-party prose.

Qualitative inquiry means going into the field – into the real world of programs and organisations and getting close enough to the people and circumstances there to capture what is happening.

Sociologist John Lofland has suggested that there are four people oriented mandates in collecting qualitative data (cited in Patton 2002) –

- The qualitative methodologist must get close enough to the people and situation being studied to personally understand the details of what goes on

- The qualitative methodologist must aim at capturing what actually takes place and what people actually say : the perceived facts
- Qualitative data must include a great deal of pure description of people, activities, interactions and settings
- Qualitative data must include direct quotations from people

At the start of my experiment, I recognised that in order to test my hypothesis I would need to –

1. Recruit a company
2. Secure a test group of employees
3. Secure a test group of ‘live’ projects
4. Secure a commitment that the test organisation would allow me to work with it for the lifecycle of the longest test project
5. Secure a commitment that the test organisation would allow me to interact with the test group of employees as frequently as required (within reason)

I realised from the outset that it would be difficult to convince a company to trust me enough to allow me to test an unknown project management process on a group of their projects and employees. I would need to create a proposal that had benefits for the test organisation and for myself i.e. I would be allowed to test my theory and they would gain something of value for themselves. In addition, because I would be working in a live environment, my method of investigation would need to be flexible enough to work with whatever challenges were presented by the test organisation. It would need to be adaptive, with the objective of arriving at an end point with data of some value and relevance to the experiment.

Nothing however was guaranteed and I accepted from the start that I might invest a lot of time and effort in a test organisation and be dismissed mid-way through my investigation or gather data that was of little value to my research. As I was testing in a live environment, I could not plan or control factors outside of the test area. I was lucky to even have a company who were willing to engage with me in the first place. It was impossible to put a contingency or risk management strategy in place as I literally had to run with whatever the test organisation presented to me.

The most I could do was ask them to verbally commit to a set of test conditions (outlined on page 42) and hope that this would suffice in controlling the test environment.

Mason states that qualitative research is “characteristically exploratory, fluid and flexible, data-driven and context sensitive” (Mason 2002 p24)

Based on what I had read about quantitative and qualitative research methods, I decided that a qualitative approach would work better in the type of environment that I would be testing and enable me to gather information as it became available i.e. via observations or conversations that I might have with the employees.

Qualitative Approaches

Mason defines the following categories of qualitative approaches (Mason 2002) –

Ethnographic Approach

Ethnography is the earliest distinct tradition of qualitative inquiry. The notion of culture is central to ethnography. “Ethnos” is the Greek word for “a people” or a cultural group. (Patton 2002). The study of ethnography is “devoted to describing ways of life of humankind..., a social scientific description of a people and the cultural basis of their peoplehood” (Vidich and Lyman 2000 p38).

Ethnographic approaches are “grounded in a commitment to the first-hand experience and exploration of a particular social or cultural setting on the basis of (though not exclusively by) participant observation” (Atkinson et al. 2001 p4-5)

Interpretivist Approach

An Interpretivist Approach regards people and their interpretations, perceptions, meanings and understandings as the primary data sources. Interpretivism does not have to rely on total immersion in a setting and can support a study which explores people’s individual and collective understandings, reasoning processes etc. An interpretive approach therefore not only sees people as a primary data source but seeks their perceptions or insider view rather than imposing an outsider view (Blaikie 2000).

Biographical, life history and humanist approaches

Using this type of approach, people and their life stories (which can be told verbally or in documentary or visual ways) are the data sources. Usually, these approaches are highly interpretive. Some use the telling of individual life stories as a way of reading social, cultural and economic history.

Conversation analysis

Conversation analysis aims to study peoples “methods” for “producing orderly social interaction” (Silverman 2001 p167), especially through naturally occurring talk. The idea is that these methods can be observed in the detail of naturally occurring conversations and that it is misleading to seek interpretive understandings to try to explain what is going on.

Psychoanalytic approach

A psychoanalytic approach has to find a way to tap those elements of a subjects experience which they do not consciously know or cannot explain. In this method, people are data sources, but the methods used (for example interviews) must provide access to the inner or subconscious subject.

After reviewing each of these five categories, I decided that an Interpretivist approach would be the most suitable for the environment in which I would conduct my study. As the information to be gathered might be considered sensitive and I was depending on the test organisations co-operation, it was important that the data gathering method was as non-threatening as possible. The technique that I would use to gather data would be an in-depth, semi-structured form of interview. A semi-structured interview would enable me to gather the information that I would require but still be conducted in a moderately informal and relaxed manner. Mason states that qualitative interviewing is a “relatively informal style” and “may involve one-to-one interactions, larger group interviews or focus groups and can be conducted face-to-face, by telephone or the Internet. (for example)”. (Mason 2002 p62)

Due to my dependency on the co-operation of the test organisation and to accommodate the work commitments of those being interviewed., it was important that the data gathering method employed was flexible, could be conducted through a variety of mediums and facilitate group or one-to-one discussions.

In his book, *Small-Scale Research*, Peter Knight also advises that for face-to-face interviewing you should “match your dress and appearance to what your potential informants expect” (Knight 2002 p54). Patton states that “If what people have to say about their world is generally boring to you than you will never be a great interviewer” (Patton 1990 p341)

In addition, Denzin and Lincoln state that “Nonverbal techniques are also important in interviewing” (Denzin and Lincoln 2003 p87).

In his book, *Interviewing : Strategy, techniques and tactics*, Gordon defines 4 basic modes of non-verbal communication :

1. Proxemic communication is the use of interpersonal space to communicate attitudes
2. Chronemics communication is the use of pacing of speech and length of silence in conversation
3. Kinesic communication includes any body movements or postures
4. Paralinguistic communication includes all the variations in volume, pitch and quality of voice (Gordon 1980 p335)

Denzin and Lincoln advise that “all four of these modes represent important techniques for the researcher. In addition, the researcher should carefully note and record respondents’ use of these modes, for interview data are more than verbal records and should include, as much as possible, nonverbal features of the interaction.” (Denzin and Lincoln 2003 p87)

As I was very aware that I would probably only have one opportunity “to do the job right”, I took this advice seriously when planning my interview technique and approach.

To improve the quality of the information gathered during the interview stage, I decided to record any displays of non-verbal communication by the interviewee (refer Appendix B – Interview Results for Stage 3.0 of Test Process).

The effective generation of data from this method would be contingent on my prior review and understanding of data from other sources e.g. journals and pertinent reference material.

Chapter 4

THE RESEARCH QUESTION

In their paper “Systems failures: An approach to understanding what can go wrong”, Donaldson and Jenkins ask “Why is there such a problem, when so much is known about failures?” (Donaldson and Jenkins 2002)

At the Standish Group’s CHAOS University, Martin Cobb, Treasury Board of Canada Secretariat, Ottawa, posed a similar question – “We know why projects fail, we know how to prevent their failure – so why do they still fail ?” (Standish Group 1996)

Statistics indicate that the costs associated with project management failure are significant – In 1999, the Standish Group reported that Corporate America spends on average \$275 billion annually on approximately 200,000 application software development projects. In 1998, US government and businesses had spent approximately \$75 billion on failed software projects and another \$22 billion on budget overruns. (Standish Group 1999)

In 2002 KPMG undertook a global programme management survey, involving a group of 134 companies from a broad range of sectors, sizes and geographical regions :

56% of those companies participating in the survey stated that they had experienced failed projects within the preceding 12 months with an average failed project cost of just under £8 million. The largest cost of project failure was £133million. (KPMG 2002)

Research Question Evolution

My interest in project management failure and the associated cost of that failure originated from my own business experience. Prior to starting my research programme I had been working in industry for 14 years and had observed with some interest the high degree of project management failure in organisations generally and how the cost of that failure was usually unrecognised and almost always unmeasured. Indeed, when I once tried to discuss improving project management practice in a particular organisation with my boss, a Vice President of IT, I was told that she wasn’t ‘interested in that softly-softly stuff’ and to ‘get on with the job for which I was employed to do’.

A part-time project management lecturing position exposed me to a broader set of industries and re-enforced my belief that project management failure was widespread and the disaster stories relayed to me on a regular basis were viewed with more amusement than as a serious issue that needed to be tackled.

I decided then to undertake some formal research in the area and to investigate if it was possible to define a solution that would reduce the probability of project management failure for organisations generally.

At the start of my research I recognised some constraints and conditions of the experiment –

1. The project management process I defined should be usable for all projects (i.e. not just IT projects)
2. The process could not ‘guarantee’ success for every project – there would always be the possibility of an unforeseen risk event which would negatively influence the outcome of a project. The most I could aspire to was a process that would increase the probability of project management success.

The practicality of the process was of particular importance – it needed to be easily usable in an average company environment – otherwise it would not be adopted. As this was to be a practical process, I would require a company who would be willing to test my process in their live environment.

Based on my experience, I believe that project management failure is rooted in a broad set of five organisational issues –

1. Lack of measurement – if companies fail to measure the effectiveness of a project, then how can they establish –

- The success of the project in delivering its objectives
- The cost to the organisation of the project failing to deliver its objectives
- The steps required to improve the situation

2. Lack of executive management support for good project management practice -

Companies respond to financial figures – if management are receiving metrics on the cost of project management failure, then they are more likely to take project management seriously and compel their organisation to do the same. In the absence of such metrics, management are less likely to lend their support to a practice that is not generally perceived to be of any real benefit.

3. Poorly thought out approach to the selection of the project management method -

When project management is introduced into an organisation, the initial perception by many staff is that it is another layer of bureaucracy designed to make their job more difficult. The benefits are almost never understood. This is further aggravated by the (lack of) effort invested in the selection process for the project management methodology. Usually companies default to an industry standard methodology which is loaded with interconnecting processes and unfamiliar terminology. It is the project management equivalent of taking someone for their first driving lesson in a Formula 1 racing car instead of a family saloon. Inevitably people are lost before they even start. In most instances it would be more appropriate to take an industry standard project management method and rework it to suit the organisation's maturity level (degree of project management competence). In this way, if an organisation has a low-level of project management maturity, they can start off with a scaled down project management methodology; familiarise themselves with the basics and then work towards an industry standard at their own pace.

In his book, "The Politics of Projects", Robert Block recommends a similar approach to methodology implementation when he proposes to the reader – "Can you customise the methodology to suit your project needs? Can you delete activities? Can you add activities? ". (Block 1983 p31)

4. Ineffective project management training -

In his article “Teaching Jack and Jill how to manage projects”,(Wartenberg 2004), Martin Wartenberg states that –

“A significant amount of project management education and/or training can be defined as Muda (Japanese word for waste). At a recent American Society for Training and Development (ASTD) conference, a speaker brought the audience of professional trainers to their feet in anger, as he claimed that over 75% - 90% of all soft skills training is either ineffective or cannot be applied effectively in the workplace. This can be contrasted with the ground rules for hard skills (software, specific tools, design practices etc.) which achieve the goal of 90% of the trainee’s absorb and can use, 90% of the new skills and processes. Project management training is made up of a mix of soft skills and hard skills. The soft skills relate to communication and the human resource elements of the project. The hard skills include the application of risk management, time (scheduling) techniques and perhaps estimating. Other areas relating to scope and integration is a mix of hard and soft skills.”

Yardley also states that “a weeks intensive training in project management techniques, even one conducted by a leading business school is no substitute for experience”. Also – “Had a program of mentoring been introduced, to help new recruits feel less exposed and at the same time learn their trade in relative safety, it might have mitigated some of the problems. This unfortunately did not happen and it was only a matter of time before the fledgling project managers resigned from the company” (Yardley 2002 p22)

In my experience (both as a trainer and trainee), the standard approach to project management training is only moderately successful in equipping people with the skills to become effective project managers.

Generally, project management training is offered in either of two forms –

- **5 day intensive training course –**

At the end of the 5 days the participants are so overloaded with information that they cannot recall what was discussed in the first couple of days and when they return to their companies, they have such a large volume of reference information that they cannot decipher what is relevant and what is not. As a consequence, they make half-hearted attempts to apply what they think they have learnt or revert back to their original project management (bad) practice. The potential benefit to be had from the training is effectively lost to the individual and the company.

- **2 day introductory course followed by a 6-12 months gap and then a 5 day intensive course –**
In this instance, the 2 day course is at such a high level that the participants only really get a basic understanding of project management – then there is a gap of 6-12+ months before they are sent on a 5 day intensive course. This staccato approach to training equips the trainees with a volume of theory but no direction on how to apply the theory in a real-life situation. Many of the potential training benefits are lost to both the individual and the company.

5. Absence of a Project Management Office (PMO) -

‘Through 2004, IS organisations that establish enterprise standards for project management, including a project office with suitable governance, will experience half the major project cost overruns, delays and cancellations of those that fail to do so’ (GartnerGroup 2000).

Gartner Group defines a project office as ‘a shared organisational structure that may serve as a repository of information on project management best practice and methodology, as a competence centre to provide project expertise and oversight for the business or as an internal consultancy to run projects. Given the appropriate governance, it can improve communications, establish an enterprise standard for project management and help reduce the effect of failed development projects on enterprise effectiveness and productivity’ (GartnerGroup1997)

In my original project management model, I suggested that there should be some form of project office within the organisation, to ensure there would be a centralised reference point for historical project related information and project management standards (as a minimum) and also to police the implementation of those standards across the organisation (for the more advanced project office structures).

(By project management standards, I mean detail of the project management methodology; a complete set of project management templates to be used in the application of the methodology; and detail of the measurement process to be applied in the evaluation of the effectiveness of the methodology)

At the start of this experiment, I argued that in order to reduce the probability of project management failure across an organisation, the above five issues needed to be addressed *as a unit*, within a comprehensive project management strategy – the strategy to be applied across business *and* IT functions *in parallel*.

Due to difficulties in evaluating the impact of such a broad range of issues, the experiment was reformulated as follows –

“The objective of this experiment is to test the hypothesis that the incidence of project management failure can be reduced by modifying both the approach to project management training and the method employed to manage projects. “

Experiment Components

The experiment consists of two components :

Experiment Component 1 - Project Management Training Model

The test project management training model comprises the following two elements –

- A 2 day intensive workshop session, built around the test project management methodology - the first day to discuss the methodology and the second day, working in teams, to complete a Case Study exercise. This Case Study exercise would present the trainees with an opportunity to practice the methodology in a ‘safe’ classroom environment with the course facilitator acting as mentor.
- The second stage of this training model is a ‘mentoring stage’ in which the course facilitator acts as mentor to the trainees for a 3 month period after the training is completed. The mentoring consists of 4 x 30 minute session per attendee. The objective of the mentoring is to accelerate the learning process and quickly resolve problems which emerge when the trainees apply the methodology to a live environment.

The benefits of this training model are as follows :

- The training is built around the project management standard defined for the company and not some generic industry standard which has limited similarities to that which the trainee is expected to use
- The training is of short duration and so the trainee should not suffer from ‘information-overload’ - at the end of the training they should have a reasonable understanding of the project management method

- The trainees are given an opportunity to 'practice the process' in a class environment with an expert on hand to advise them on the practicalities of applying the process
- There is a 3 month 'safety-net' during which the trainees can resolve any issues they have with a mentor who is an expert in the project management method

Experiment Component 2 - Project Management Methodology

The test project management methodology will be based on an industry standard methodology, tailored to the environment of the test organisation.

Chapter 5

THE STUDY

The Test Approach employed to test this hypothesis is outlined in Fig. 3 below.

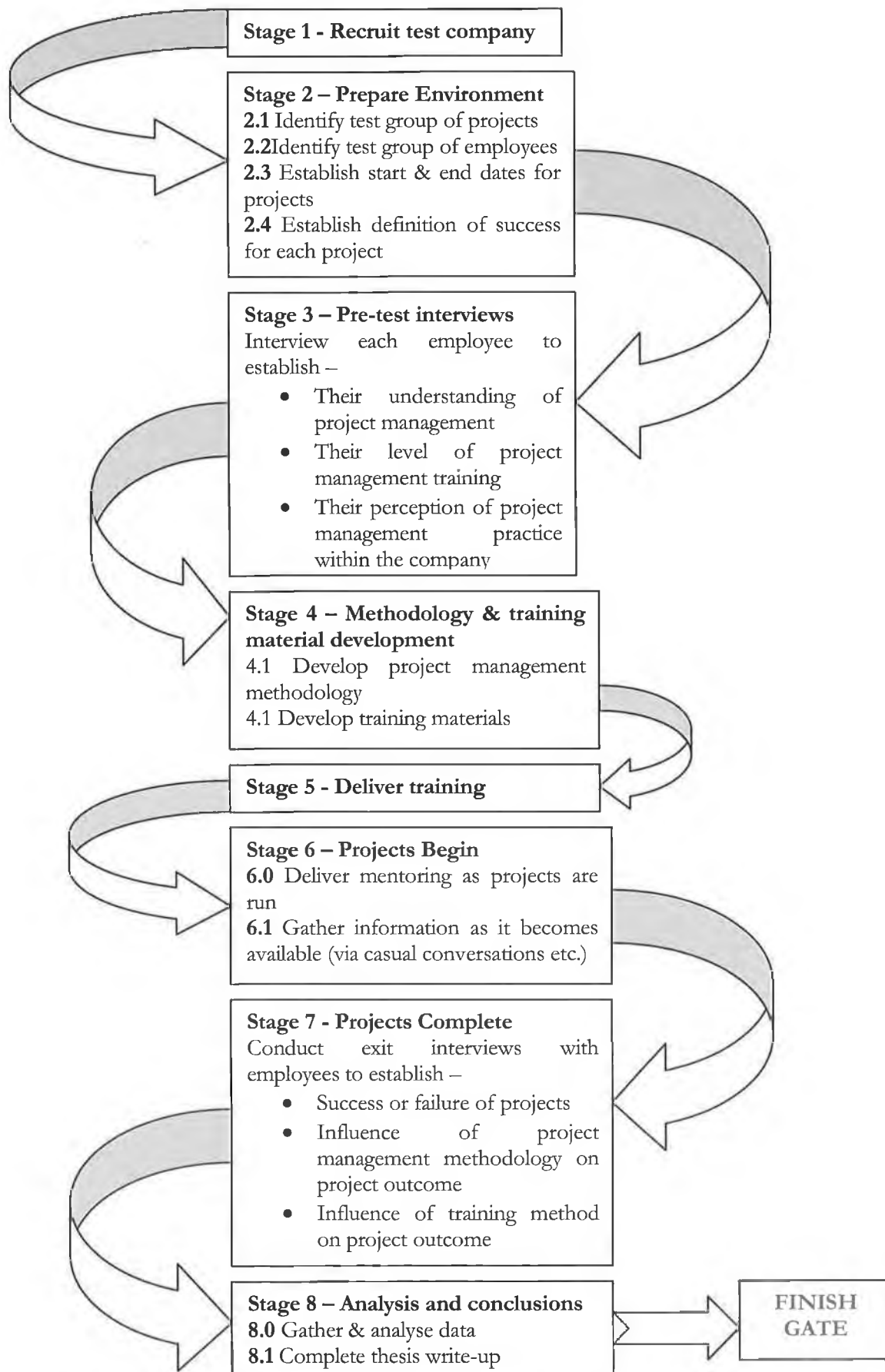


Fig. 3 – Test Process

The experiment was conducted by executing the first seven stages of the Test Process.

This chapter discusses the outcome from the completion of these stages.

Test Process Stage 1 - Recruit test company

As background information, I decided to establish a baseline and start my test process by studying the condition of project management practice in Irish industry. I targeted a number of companies selected at random across a broad range of industry sectors and requested that they participate in a survey which would enable me to understand the level and quality of project management practice within their organisation. I depended heavily on people's good will to participate in my survey and I was fortunate to recruit one company from each of eight industry sectors – Pharmaceutical, Semi-conductor, Biometrics, Financial/Trading, Government, Banking, Outsourcing/Consulting, Airline.

The survey was driven by a questionnaire designed to establish the interviewee's understanding of project management and also to establish the methods employed by their organisation to manage projects.

The interviewee's ranged from the position of Chief Technology Officer to Project Manager.

The results of the interviews are contained within Appendix A – Indigenous Company Survey - Questionnaire Results.

The survey results indicated that although executive management appeared to support the practice of project management, they did not demonstrate any interest in gathering facts regarding the success of their organisations project management activity and the costs associated with the failure of that activity (refer Questions 11, 12 and 13 within Appendix A – Indigenous Company Survey - Company Profile)

In addition, the definition of project success could vary, depending on the respondent's view – for example, the Chief Operating Officer of one particular company stated that 100% of projects executed by his organisation in the previous 12 months were 'successful' (refer Question 8 within Appendix A – Indigenous Company Survey - Personal Profile), but yet one of these projects required rework at an additional project cost of €200,000. I suggested that this represented partial project management failure but was told that in the overall context, €200,000 was a small amount of money and did not represent failure. (I also suggested to the COO, that a €200k cost, replicated in part or whole, across a portfolio of projects could add up to a significant amount of 'lost' money for the company – this was acknowledged)

In summary, this survey demonstrated that project management practice within the companies reviewed was more improvised than best practice. An extract from the questionnaire responses indicate that 7 out of 13 respondents employed a bespoke project management methodology; 5 had variations on industry standard methodologies and 1 had no organisational-wide standard.

7 out of 13 respondents stated that the project management method employed was not supported and applied across the organisation. When asked how the method was selected by the organisation, answers ranged from 'in-house engineers dreamt it up' to 'method was imposed by external consultants'.

8 respondents (62%) stated that compliance by the organisation to the method was 'weak' and 9 respondents (69%) stated that the effectiveness of the method was never measured.

The responses to these questions indicated that the companies participating in the survey could only be rated at level 1 or 2 of project management maturity. At these levels project management is used sporadically and standards are not applied appropriately (PWC 2004)

(In an organisation that has immature project management processes, projects are executed without many guidelines and the outcome of a project depends largely on the capability of the team and the project leader. Consequently, the result is not predictable.

In an organisation that has mature processes, a project is executed by following a methodology that the organisation has defined and the project outcome is less dependent on the team capability and more controlled by the methodology). (Jalote 2000 p6)

This was particularly alarming as the budgets of the top priority projects for the companies surveyed ranged from €40 k - €11m. But yet the selection process for the methodology used to manage these projects was non-existent; compliance by the organisation to the methodology was weak and measurement of the effectiveness of the methodology was virtually absent.

A project management survey carried out by PricewaterhouseCoopers in 2004 on 200 small-medium sized companies in 30 countries, found similar low levels of project management maturity.

53% of companies participating in their survey were rated at level 1 & 2 of project management maturity. (refer Fig. 4)

An interesting result from the PWC survey, was that 47% of those companies surveyed were rated at level 3-5 of project management maturity.

None of the companies participating in my survey scored within this range. This may have been because the sample size of 8 companies was so small or perhaps is indicative of a wider project management problem within Irish industry.

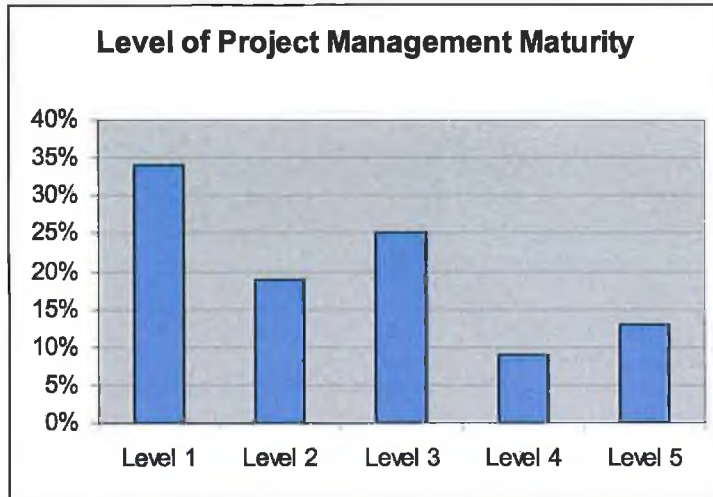


Fig. 4 – Project management maturity levels – PWC survey results

Finally, a positive outcome from this survey was the recruitment of a test organisation in which the experiment could be executed.

This completed Stage 1 of the Test Process – Recruit Test Company.

Test Company – Background

The test company leads one of the fastest growing segments of the semiconductor industry - programmable logic devices. It develops, manufactures, and markets a broad line of advanced integrated circuits, software design tools and intellectual property. Customers use the automated tools and intellectual property -- predefined system-level functions delivered as software cores -- from this company and its partners to program the chips to perform custom logic operations.

Founded in 1984, this company pioneered a revolutionary new technology, the field programmable gate array (FPGA), and shipped its first commercial product in 1985. Today, it fulfills more than half the world demand for FPGAs. It also markets complex programmable logic devices (CPLDs), which are faster than FPGAs for some applications but have fewer logic resources.

The company's programmable logic solutions help minimise risks for manufacturers of electronic equipment by shortening the time required to develop and bring new products to market. Customers can design and verify their unique circuits in its programmable devices much faster than they can by using traditional methods where the logic circuits are fixed once the chip is manufactured. Moreover, because the company's devices are standard parts that are ready to be programmed, customers are not required to wait for prototypes or pay large up-front engineering costs, as with fixed logic or ASICs. Its products are used in a wide array of digital electronic applications ranging from wireless base stations to DVD players.

The company has more than 7,500 customers worldwide and more than 50,000 design starts. It counts among its customers, global leaders such as Alcatel, Cisco Systems, EMC, Ericsson, Fujitsu, Hewlett-Packard, IBM, Lucent Technologies, Motorola, NEC, Nokia, Nortel, Samsung, Siemens, Sony and Toshiba.

It has approximately 2,600 employees, with nearly half of its engineers dedicated to software development.

Its headquarters are in San Jose, California and it has a manufacturing facility in Dublin. It employs approximately 430 people at its Dublin site.

Test Process Stage 2 – Prepare environment

At the start of the engagement with the test company I outlined my requirements for executing the experiment. I labelled these my ‘Test Conditions’.

These Test Conditions stipulated that I would need -

- A test group of employees
- A test group of ‘live’ projects
- A commitment that they would allow me to work with them for the lifecycle of the longest test project
- A commitment that they would allow me to interact with the test group of employees as frequently as required (within reason)

I also outlined the steps that I would take to test my hypothesis (as per Fig. 3 - Test Process) I emphasised that my work could not proceed unless the test company was prepared to meet these requirements.

A Senior Manager and a Business Analyst were appointed to liaise with me during the test cycle. None of the team members from the test project group participated in the execution of this stage.

The test company’s response to my test process requirements was given via email. I have reproduced this email verbatim below.

Email response from test organisation :

“ 1. Test project group

- Retest Reduction - 9 people, primarily from Test area. Duration 3 - 6 months
- Product Flow - 6 people, primarily from Test area. Duration 2 - 3 months
- Cycle Time - 4 people - Planning, Eng, Test. Duration 3 - 9 months
- EDI Automation - 5 people - Customer Service /IT. Duration 2 - 3 months

- Seiko Handler Improvements - 4 people from Maintenance. Duration 3 - 6 months

Sample test group of employees - total is 28 people - does not include anyone from San Jose (small numbers).

2. Interviews

We will schedule as many as possible for face to face Feb 16th - 18th. Because of shift patterns and other activities, it may not be possible to have everyone for face to face.

Others should be done by email (preferably) and / or phone.

Introductory presentation - can you do this at the start of training - very difficult to get everyone together.

3. Training

Our preference is for 2 x 1 day sessions - very very difficult to break out people for 2 days in the middle of our busiest quarter.

Training will be onsite

4. Follow Up / Mentoring

No problems. “ **(End of email)**

The definition of success defined by the test company for all test projects was that each project was completed on time and to the specifications agreed by the TPM Steering committee.

All of the projects were scheduled to commence by April 2005 (after the project management training was completed).

The estimated latest completion dates for all projects were as follows :

- Retest Reduction – October 2005
- Product Flow – July 2005
- Cycle Time – January 2006

- EDI Automation – July 2005
- Seiko Handler Improvements – October 2005

The limitations of testing in a live environment were very evident from this email.

References to shift patterns, difficulties in getting everyone together and difficulty in scheduling two days of training to run sequentially was a forewarning of the problems which I would experience in later stages of the test process.

However, it would be impossible to evaluate the effects of the test training approach and project management methodology in anything other than a live environment, so I noted the potential difficulties and proceeded to schedule interviews as per step 3.0 of the Test Process.

This completed Stage 2 of the Test Process – Prepare Environment.

Test Process Stage 3 – Pre-test interviews

According to the test process I needed to interview each employee to establish –

- Their understanding of project management
- Their level of project management training
- Their perception of project management practice within the company

Working with the Business Analyst I scheduled eighteen interviews to be conducted face-to-face and via telephone on 16th & 17th February, 2005. I also had an opportunity to schedule another seven interviews via email or telephone. As I did not believe email was a productive medium through which to conduct an interview – the information gathered potentially would have been academic and perhaps flawed – I requested instead that telephone interviews be scheduled with this group.

I succeeded in scheduling another 4 telephone interviews.

In the earlier email I had been offered a potential test group size of 28 people – at this early stage it was already reduced to 22 people.

Of the eighteen interviews scheduled for the 16th & 17th February, I had one no show and one other person refusing to participate in the interview as “she had not been informed of the reason for the interview and needed to speak to her boss. In addition, she would not be participating in any training until she spoke to her boss”.

Of the 4 additional telephone interviews scheduled, I had one no-show.

In total, I conducted 19 interviews for Stage 3.0 of the test process.

- 9 of these people were from the ‘Retest reduction’ project;
- 6 were from the ‘Product Flow’ project;
- 2 were from the ‘Cycle Time’ project;
- 1 was from the ‘EDI Automation’ project;
- 1 was from the ‘Seiko Handler Improvement’ project

The results of these interviews are contained within Appendix B – Interview results for Stage 3.0 of test process.

The responses from the pre-test interviews were revealing –

- The organisation was apparently project driven – one respondent answered that he had worked on 30+ projects since commencing employment with the organisation and another stated that “The test company is project oriented and people should know how to run a project properly”
- Project budgets could be high – one respondent was working on a project with a budget of €2m. However, of the 19 people who participated in the interviews, only 5 interviewees or 26% had received some form of project management training. This, in spite of all 19 people being expected to work in either a team or leading role on a project.
- 14 respondents (76%) had received no project management training.

I expected all of those interviewed to play a role in the test projects (either as a team member or project leader) and assumed they would have a basic understanding of project management and have participated in some form of project management training.

As evidenced from the interviews, this was not the case.

- In addition, only 3 people answered positively when asked if there was a project management methodology in existence within the company (and all three had different answers to the type of methodology used); 11 people answered negatively to the same question. (The remaining 5 respondents either didn't know or were not long enough with the company to know)
- 8 people (42%) referenced resource issues as one of the main problem areas for projects and 4 people (21%) referenced workload or insufficient time as a source of problems for projects.

In other words, 63% of respondents referenced either time or resource issues as a source of project problems.

Implications from my analysis of the interview responses were that –

- The company appeared to be project driven and some of these projects could be costly
- Staff were poorly trained (in project management) and generally had low levels of project management knowledge
- There was no standard project management methodology in use
- There appeared to be some issue with resource (availability?) and time (pressurised ?) for company projects

I did not observe any displays of non-verbal communication by interviewees during the face-to-face interviews. Questions were answered directly and clarification sought when required.

This completed Stage 3 of the Test Process – Pre-test interviews.

Test Process Stage 4 – Methodology and training material development

The responses from the pre-test interviews implied that the level of project management knowledge within the test group was low. In addition, there was no standard project management methodology in use within the test organisation. As a consequence of this, I decided to develop a project management methodology that followed best practice but was simple enough to be used effectively by people with limited project management knowledge. (By following best practice, I mean that the method had all of the key processes contained in the industry standard project management methodologies PRINCE and PMBOK, but did not reference any of the optional processes contained in these methods – for example Project Procurement Management).

The methodology (called PM-3) consists of 3 stages and is outlined in Fig. 5 below.

It is worth noting that the test project management method is generic enough to be used in any software development environment, for example an Agile environment or on the other extreme an environment that uses the Waterfall model for developing software. Because of its simplicity, the method can co-exist with any software development methodology or approach.

Following on from defining the project management method, I developed training materials for the 2-day project management training programme referenced in the test process.

This completed Stage 4 of the Test Process – Methodology and training materials development.

PM-3

Stage 1 – Scope	Stage 2 – Plan	Stage 3 - Implement
<p>Step 1 – Meet with sponsor to review project requirements</p> <p>Step 2 – Schedule a scoping workshop</p> <p>Step 3 – Project Manager, acting as workshop facilitator, uses workshop to identify project deliverables, scope, resource requirements, initial costs and early-stage risks associated with project activities</p> <p>Step 4 – Document workshop output – WBS, PMD, Risk Log, Resource Requirements Matrix</p> <p>Step 5 – Secure approval for documentation</p>	<p>Step 1 – Set-up the PCB</p> <p>Step 2 – Create the Resource Management Plan</p> <p>Step 3 - Create the Project Schedule</p> <p>Step 4 - Create the Risk Management Plan</p> <p>Step 5 – Define the Change Management Process</p> <p>Step 6 - Create the Communications Plan</p> <p>Step 7 - Create the Quality Plan</p> <p>Step 8 - Finalise the PMD</p>	<p>Step 1 – Execute the project management process</p> <p>Step 2 - Monitor the project management process</p> <p>Step 3 - Close & evaluate the project</p>

Fig. 5 – PM-3 Test Project Management Methodology

Test Process Stage 5 – Deliver training

Training was scheduled with a group of 28 people for Friday 25th February and Tuesday 1st March, 2005. My initial training proposal was for two days of sequential training – however, I was advised that due to work commitments it would be impossible to release everyone for two days in a row. I therefore accepted the test organisations alternative suggested training dates as above.

The first day of training was an introduction to the test project management methodology and the second day required trainees to divide into teams and apply the methodology to a sample case study exercise. I would mentor the trainees through the case study exercise.

The objective of this training approach was to accelerate the learning process by intensively pushing the trainees through the theory of the methodology and immediately thereafter presenting them with an opportunity to apply the methodology in a non-threatening class environment.

The intention was to equip them with basic project management skills in as short a timeframe as possible and position them to effectively manage, lead or participate as a team member in the execution of a test project. Any gaps in their skill-set would be filled by the follow-on mentoring to be delivered when the test projects started.

Training Exercise Execution

The training target group was to consist of 28 people – in fact, 11 people turned up on the first day of training and 9 people arrived for the second day. Of the 11 people who attended the first day of training :

- 5 were from the ‘Retest reduction’ project;
- 3 were from the ‘Product Flow’ project;
- 1 was from the ‘Cycle Time’ project;
- 1 was from the ‘EDI Automation’ project;
- 1 was from the ‘Seiko Handler Improvement’ project

3 people from the ‘Retest Reduction’ project dropped out on the second day.

One additional person from the 'Cycle Time' project turned up on the second day of training (this person did not attend on the first day).

In addition, only 3 project leaders/managers from the test project group, participated in the training exercise. The reason cited for the no-shows was that people had such a high workload that they could not be released for training.

I expressed concern to management that the low training turn-out would make it difficult to evaluate the effectiveness of the methodology and training on the test project group.

They responded that "the representatives from each team who attended the training would be responsible for keeping the methodology on track."

I continued with the test process, with the intention of gathering data (negative and positive) at every stage, and using this data to formulate my conclusions.

Training participants completed a post-course evaluation form at the end of the 2-day training (refer Appendix C – Course evaluation feedback forms)

The feedback was very positive :

Q8 – Score the effectiveness of the training with respect to - (a) Improving your project management knowledge (b) Improving your ability to execute your role within a project
Answers - (a) Improving your project management knowledge – 5 (56%) of the respondents answered 'Very effective' and 4 (44%) answered 'Moderately effective' (b) Improving your ability to execute your role within a project – 7 (78%) of the respondents answered 'Very effective' and 2 (22%) of the respondents answered 'Moderately effective'. None of the respondents answered 'Ineffective' to this question

Q12 - How would you rate your overall satisfaction with the course?
Answers – 7 (78%) of the respondents answered 'Very satisfied' 1 (11%) answered 'Moderately satisfied' 1 (11%) gave no answer.

Note that I requested the trainees complete the feedback forms ‘honestly’ – I was not interested in ‘false praise’ as negative feedback was as beneficial to my research as positive feedback.

This completed Stage 5 of the Test Process – Deliver training .

Test Process Stage 6 – Projects begin

Stage 6.0 – Deliver mentoring

I sent an email on 28th March 2005, to 10 of the people who participated in the training, inviting them to participate in mentoring sessions with the objective of resolving any problems they might have in the application of the project management methodology.

I received two responses to this email and scheduled a mentoring session with both parties.

It took three attempts, cancellations and deferrals before I successfully managed to meet with one of these people due to her work commitments.

I had no other requests for mentoring.

Stage 6.1 – Gather information as it becomes available

On Friday 22nd April, I scheduled a review of Project Control Books for all test projects and to discuss any issues with the project leaders. I met with 3 people during this session and had a short review of their project documentation. They appeared to be making a reasonable attempt to follow the project management methodology.

From this point I intentionally had no interaction with the test environment as I wanted to ensure that the test process would proceed without any unnecessary influence from me.

On 3rd June, I received an email from one of my main contact leads within the test organisation which I have reproduced verbatim below :

“There has been a rationalisation of the projects which were using the test project management methodology. Some of these have now been temporarily placed on hold due to resource constraints. I think this would be a good opportunity for mentoring the team members on the project close out process. We will resume the projects in the future, so do not want to lose any of the work which has already been complete.”

In effect, this meant that 2 of the original test projects were being placed on hold and one other was assigned to a project manager who had not attended the original training.

Only 2 projects – EDI Automation and Seiko Handler Improvements, remained in the test project group.

This completed Stage 6 of the Test Process – Projects begin.

Test Process Stage 7 - Projects complete

In October 2005, I interviewed the Project Manager for the EDI Automation project which was due to be completed in Q1 of 2006. (Refer Appendix D – Test Process Completion Questionnaire).

This project had already been restarted due to risks which were identified through the application of the test project management methodology. At that time the Project Manager told me that without the test project management methodology the risks would not have been identified until much later in the project lifecycle which would have had serious consequences for the outcome of the project.

So this was a positive result with respect to the test project management methodology.

However, during the October interview the project manager told me that the project had been stopped again and she was ‘going back to square 1 to speak to stakeholders – there were conflicts within the team and a lot of disagreement about who (which function) should manage or own the project.’

The conflict only really manifested itself at this late stage although it had been slightly present at the start of the project.

I enquired as to the role of the sponsor in the midst of this conflict and suggested that they step in to resolve the issues and push the project forward. I was told however, that the sponsor was ‘inundated with work and could not commit to sorting out the project problems’.

So a second restart was scheduled for the project.

At this point I decided to conduct the test process completion questionnaire with the project manager as I was not sure when the end date would arrive for this project.

I directed the project manager to answer the questions with respect to the work carried out thus far on the project. Her responses were extremely positive (Refer Appendix D – Test Process Completion Questionnaire)

Q9. With respect to the test project, rate the effectiveness of the training against the following -

Answers -

- (a) Improving your project management knowledge – **Answer = Very effective**
- (b) Improving your ability to apply the project management methodology immediately –
Answer = Very effective
- (c) Having an immediate positive impact on the management of the project – **Answer = Very effective**
- (d) Improving your ability to fulfil your role within the project more effectively – **Answer = Very effective**
- (e) Improving productivity – **Answer = Very effective**

Q11. With respect to the test project, rate the effectiveness of the project management methodology employed against the following criteria -

Answers -

- (a) Increasing the probability of success for the test project – **Answer = Very effective**
- (b) Improving product quality – **Answer = Moderately effective**
- (c) Improving team/management communications – **Answer = Very effective**
- (d) Improving documentation quality = **Answer = Very effective**
- (e) Improving productivity = **Answer = Very effective**

In January 2006, the Seiko Handler Improvement project finally completed. I interviewed the Team Leader for this project and his feedback with respect to both the test training approach and the test project management methodology employed was very positive. (Refer Appendix D – Test Process Completion Questionnaire)

Q9. With respect to the test project, rate the effectiveness of the test training against the following criteria -

Answers -

- (a) Improving your project management knowledge – **Answer = Very effective**
- (b) Improving your ability to apply the project management methodology immediately –
Answer = Very effective
- (c) Having an immediate positive impact on the management of the project – **Answer = Very effective**
- (d) Improving your ability to fulfil your role within the project more effectively – **Answer = Very effective**
- (e) Improving productivity – **Answer = Moderately effective**

Q11. asks 'With respect to the test project, rate the effectiveness of the project management methodology employed against the following criteria -

Answers -

- (a) Increasing the probability of success for the test project – **Answer = Very effective**
- (b) Improving product quality – **Answer = Very effective**
- (c) Improving team/management communications – **Answer = Don't know**
- (d) Improving documentation quality = **Answer = Moderately effective**
- (e) Improving productivity = **Answer = Moderately effective**

The implication from these interviews was that the test training approach and test project management methodology positively influenced the project environment and outcomes of the two projects measured.

I had reason to believe that there was potential benefit to be had by the application of the test project management methodology and training style to projects generally.

I acknowledge however, that in order to establish this conclusively I would need to conduct further tests with a larger sample size of projects and participants.

This completed Stage 7 of the Test Process – Projects complete.

Test Process - Execution Summary

Projects	People Committed (Jan '05)	Pre-test Interview Number of Participants	Training Attendance Day 1	Training Attendance Day 2	Mentoring Number of Participants	Projects Remaining After Stage 6
Retest Reduction	9	9	5	2	0	Shelved
Product Flow	6	6	3	3	0	Shelved
Cycle Time	4	2	1	2	0	Shelved
EDI Automation	5	1	1	1	1	Ongoing
Seiko Handler Improvement	4	1	1	1	1	Completed

FINDINGS AND CONCLUSIONS

The objective of this experiment was to test the hypothesis that the incidence of project management failure could be reduced by modifying both the approach to project management training and the method employed to manage projects.

Using Basili's classification, this experiment could be categorised as an *in vivo* experiment involving multiple teams and multiple projects.

At the start of this experiment I undertook a project management survey of eight industry sectors, to establish the level of project management maturity within indigenous industry.

The sectors surveyed were Pharmaceutical, Semi-Conductor, Biometrics, Financial/Trading, Banking, Government, Outsourcing/Consulting and the Airline industry.

The results from this survey suggest that even though project budgets for the companies surveyed could be as high as US \$10 million, project management practice was immature and improvised. (i.e. project management was used sporadically and standards not applied appropriately). It may be valuable to re-run this survey on a larger sample size of indigenous companies to investigate if such project management immaturity is commonplace. The opportunity for improving project management practice in Irish companies and consequently achieving project-related cost savings may be significant.

- **Key Finding 1 – Project management maturity within indigenous companies appears to be low - it would be worthwhile investigating this further to establish if such project management immaturity is typical for Irish industry.**

(Note : A survey of project management practice in Irish industry undertaken by Clarion Consulting and published in March 2007 appears to support the above findings. The Clarion Consulting survey highlighted a widespread deficit in sound project management practice across public and private sectors. It stated that "The (project management) skills deficit is hampering business competitiveness in the private sector and the smooth rollout of services in the public sector, resulting in budget overruns, missed business opportunities and lost customers" (Clarion Consulting 2007))

A test organisation was recruited from the companies who participated in the survey. The experiment commenced in August 2004. It concluded in January 2006 when I completed seven stages of an eight stage test process.

The feedback from the questionnaires used in the Test Process revealed the following –

- The test organisation was project driven
- Some projects could be costly (a budget of €2m was mentioned for one)
- Staff were poorly trained (in project management) and generally had low levels of project management knowledge
- There was no standard project management methodology in use
- There appeared to be some issue with resource (availability?) and time (pressurised ?) for company projects

The opportunity to improve project outcomes by applying the test training approach and project management methodology was significant.

The test company originally offered me 5 test projects and 28 employees in the test sample group.

At the conclusion of the test process, one test project was completed with one original member of the training group leading this project.

In the intervening 17 months, 4 of the test projects were shelved (due to resource issues), reassigned or restarted. The restarted project was mis-managed due to the sponsor's inability to release himself from other work commitments.

The 28 proposed members of the test sample group never materialised (even though there was a critical requirement for project management training, resources could not be released to participate in training due to their level of work commitments).

In a 2-stage test training programme, 11 out of 28 people attended stage 1 of the programme and only 2 of these 11 people participated in stage 2 of the training programme (the mentoring stage).

This poor participation in the training programme would perhaps suggest that a different training format would have been more effective. For example –

- If the programme was reduced from a 2-day to a 1-day programme would more people have participated ? I doubt it - turnout appeared to be dependent on the work pressures that people were under during that particular time – when I spoke to a manager about the poor turnout he stated that people could not be released for training due to work commitments – for them it was more about prioritising at that moment – delivering on work obligations or attending training ? It would be easier to miss training than to explain missing a deadline to attend training. So in this instance there did not appear to be an issue with training duration but there was an issue with prioritising and scheduling. In my opinion, management should have made the training a higher priority and schedule it for a date when staff were more likely to attend. The attendance at the training may then have been greater.
- Should those who just turned up for the second day have been turned away ? No - the objective of the training exercise was to test the impact of the training approach on project outcomes – this required a live training environment and all that it presented. The data gathered needed to represent the test organisation as it presented itself at every stage of the test process. I did not want to interfere with the natural process of the test organisation – if for whatever reason some people could only participate in the second day of the training programme then perhaps there was a valid reason for this which may have been significant to the outcome of the experiment. So I deliberately allowed the test process to flow as the test organisation allowed it to flow with the objective of gathering data at every test stage.
- Could something useful have been done in just half a day or a single one-hour lecture (in line with the Pareto Principle)? Unlikely – As stated earlier, training attendance appeared to be dictated by when the training was given and the work commitments at that time. So even if the training was reduced to a single hour, if that hour conflicted with work commitments and appropriate priority was not assigned to that training hour, then staff were unlikely to attend. In addition, I was testing the affect of a particular training style, this style being – a 2 day training programme consisting of one theory day and one practical day (in that order). So changing the training format would have invalidated the experiment.

- Would it have been better to make mentoring compulsory but restricted to one follow-up session? No - As before, participation in mentoring appeared to be dependent on staff work commitments; for example it took three attempts, cancellations and deferrals before I successfully managed to meet with one particular staff member (who requested the mentoring herself so obviously thought she needed it). So the number of mentoring sessions appeared to be irrelevant – prioritising a mentoring session so that it was immovable (virtually) in a works calendar would appear to be of greater importance than the number of mentoring sessions available.
- What about putting more responsibility on to those being trained by requiring them to keep a project management log? Unlikely to result in any real benefit i.e. - Anyone who used the test project management methodology to manage a project was expected to maintain a Project Control Book (PCB). The PCB was the project repository which captured all project-related information. Even though this was the most basic project repository, the trainees still found it time-consuming to administer and indeed questioned its relevance. It would have been difficult to ask them to also maintain a project management log and indeed the accuracy of the information contained within it may have been questionable.
- Could the project management method have been simplified? No - The project management methodology was written to follow project management best practice but contained only the core processes of good project management practice. It was a highly simplified project management method. Consequently, to simplify it further would have made it unusable.
- Can you help a company that does not recognise it has a problem? Possibly i.e. - When the test company initially engaged with me they stated that they had a critical requirement for project management within their organisation. From the evidence presented to me via interviews and management meetings, this was true. However, the organisation did not appear to recognise that before you introduce any new work process into a company, you must first ensure that you are adequately staffed to release people for training on the new process. Failure to first resolve resourcing issues may result in the situation which presented itself in this experiment – people unable to attend valuable and necessary training and consequently unable to properly apply the process on which they were expected to be trained. In this instance, training investment + benefits from improved procedures are potentially lost. In addition, frustrated staff may feed an already pressurised environment leading to an endless cycle of inefficiencies. So, can you help an organisation that does not recognise it has a problem? The answer to this lies in Key Finding 2 – it states that - “Before a software engineering experiment is run in a live environment we should first investigate if there are broader organisational issues (perhaps not directly related to the

experiment) which may affect the execution and ultimately the results of the experiment.” Equally we could state that before a new process is introduced into an organisation we should first investigate if there are broader organisational issues (perhaps not directly related to the process) which may affect the application and ultimately the effectiveness of the process.

- **Key Finding 2 – Before a software engineering experiment is run in a live environment we should first investigate if there are broader organisational issues (perhaps not directly related to the experiment) which may affect the execution and ultimately the results of the experiment.**

Four of the five original test projects failed to complete due to resource-related issues. However, the feedback from the project manager who directed the one successful project was very encouraging.

He stated that the test training had been ‘very effective’ in –

- Improving his project management knowledge
- Improving his ability to apply the project management methodology immediately
- Having an immediate positive impact on the management of the project
- Improving his ability to fulfil his role within the project more effectively

He also stated that the test project management methodology was ‘very effective’ in –

- Increasing the probability of success for the test project

The combined feedback from all of the questionnaires and evaluations carried out during this experiment was very favourable.

- **Key Finding 3 – Experiment results suggest that the test training approach and project management methodology had a positive impact on the test project environment. It would be worthwhile to re-run the experiment on a larger sample size of projects to establish if these results can consistently be obtained across a larger sample group.**

Key Finding 4 - The lessons to be learned with respect to software engineering experiments in general are as follows :

- Some experiments can only be properly conducted in a live environment – this can present some difficulties to the person executing the experiment –
 - Difficult to recruit enough organisations to get a large sample size - for example, I used the early-stage survey of indigenous companies as an opportunity to invite companies to participate in my experiment but only one company agreed to partake. It was difficult to even get people to answer emails or return my calls ! I accepted this as the reality of testing in a live environment and so I had no choice but to work with only one test organisation. There are obvious advantages to having a large test sample size (Greater volume of test data to interpret; Less dependence on one organisation; Reduced risk of experiment failure) – but sometimes a large test sample is just not available and you do the best with the test environment presented to you
 - Difficult to get test organisations to ‘sign-up’ and fully commit to the experiment conditions
 - ‘Unknowns’ of a live environment – you cannot plan for everything
 - Priorities – a changing landscape in the test organisation can reduce your experiment to a lower priority, making it difficult to execute the experiment as planned
- At the start of an experiment we should recognise that working in a live environment can be challenging. However, we should view any challenges presented as opportunities to collect potentially valuable data about the test environment; data that might be used in future experiments or indeed to add value to the result of the experiment itself.

Finally, these four key findings are valuable results from an experiment that presented some difficulties due to the live environment in which it was run. Factors outside of the experiment made it difficult to properly evaluate the effects of the test training approach and methodology – consequently I would consider the experiment to have only been a partial success.

The results however, suggest that it may be beneficial to the project management industry to conduct further work in this area. This may be something to consider for a future date.

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APPENDIX A – INDIGENOUS COMPANY SURVEY – QUESTIONNAIRE RESULTS

Introduction

This survey was driven by a questionnaire – 13 individuals were interviewed across 8 indigenous industry sectors.

The questionnaire was designed to establish :

- (a)The project management practice employed within a cross section of indigenous companies
- (b)The level of understanding regarding project management best practice of those participating in the survey

However, it should be acknowledged that from the outset I was conscious that this questionnaire would be used to conduct a survey of ‘live’ companies – there was a distinct possibility that these live environments would present me with the following issues when conducting the survey –

- The survey participants might be unwilling to engage fully with the survey due to their perception of them ‘doing me a favour’ – i.e. there was no benefit for them
- I would probably only have an opportunity to conduct each interview once – therefore there would be little opportunity to clarify responses in follow-up interviews
- Time limitations – the survey participants may have very little time to give to the questionnaire
- Implications for the survey participants – would their opinions be reported elsewhere (to their boss or publicly) ?

These potential issues fed into the design of the questionnaire and I was mindful that the questions had to be clear; relevant; concise and still gather as much information as possible regarding the project environment being surveyed and the level of project management experience of the individual being surveyed. In addition, research conducted by the Standish Group and GartnerGroup indicates that executive management support (Standish Group 2001) and the existence of a Project Management Office (GartnerGroup 2000) can increase the likelihood of improved project outcomes. I also therefore included questions relating to these two areas in the questionnaire.

The results from the survey are as follows :

Questionnaire Results

Personal Profile	
Question	Answer
Q1 – To what industry sector does this company belong?	Pharma = 1 Semi-conductor = 3 Biometrics = 1 Financial/Trading = 1 Government = 3 Banking =1 Outsourcing/Consulting = 2 Airline = 1
Q2 – What is your job title ?	IT Director = 1 Programme Manager = 1 European IT Director = 2 Test & Worldwide Logistics Mgr=1 Head of Engineering = 1 IT Manager = 1 CTO = 1 Director of ICT Services = 1 Project Manager = 2 Design and Build Manager = 1 Head of IT = 1
Q3 – Have you attended project management training ?	Yes = 12 N/A = 1
Q4 – What was the average duration of the training ?	5 days = 2 10 days = 1 2 days = 3 1 year DIP = 1 2 year Masters = 1 4 days = 1 3 days = 2 N/A = 2
Q5 – What is your definition of Project Management success ?	(1)Deliver on time/specification/budget (2)Deliver on time/budget/meets customer expectations (3)Ability to deliver a s/w product to time/cost/quality variables (4)Best fit to requirements + on time + within budget (5)The project is a success in the business community (6)The project addresses the users objectives

	<p>(7)The project is a success when the owner says it's a success</p> <p>(8)Clarity re: project state & scope; Meet financial and business objectives of project; Effectiveness of risk,task and communications management</p> <p>(9)Budget/Quality/Timescale noting that these are 'moveable beasts'</p> <p>(10)Delivery of benefit and value to the organisation - embedded in this is time/cost & quality</p> <p>(11)Meeting the customers expectations</p> <p>(12)Project defined/scoped and resourced correctly & delivered on time</p> <p>(13)Balancing customer expectations/needs/time/cost/quality with intrinsic/extrinsic needs of employees</p>
<p>Q6 - What are the contributory factors to project management failure within this organisation ?</p>	<p>(1)Lack of sponsorship; Unclear goals; Unclear stakeholders; Unclear methodology</p> <p>(2)Scope creep; Failure to agree project objectives; Lack of controlled environment in which project is run; Lack of correct business involvement; Lack of PM Methodology</p> <p>(3)No projects considered to have failed - met the time to market and quality requirements of the company and this considered sufficient</p> <p>(4)Badly defined requirements; Scope creep; Commitment from business; Calibre of people</p> <p>(5)Change Management</p> <p>(6)Organisational structure inhibits project success - resources report to multiple managers; Securing resources from user community is difficult;</p> <p>Lack of decision making - meetings are cancelled with no notice</p> <p>(7)Business ownership - trying to get the business owner to realise that he is responsible for driving the project; PM's have no control over project</p> <p>(8)Lack of business involvement & sponsorship; Lack of project risk awareness; Lack of clarity regarding project roles & responsibilities</p> <p>(9)Failure in planning; Poor understanding of resources; Poor management of customers; Poor communications; Leaving too many things as subjective rather than objective measures</p> <p>(10)Poorly selected project managers; Extension of project delivery dates;</p> <p>Not understanding benefits; Sloppy 3rd parties; Misunderstanding of data and impact of data on a project;</p> <p>Industrial relations can stop projects</p> <p>(11)Change Management failure with the client;</p>

	<p>Ineffective project scoping; Agreement of deliverables (12) Incomplete/Inaccurate business req's; Incorrect assumptions; Unrealistic timeframes (13) Business participation; Unrealistic timeframes; Scope creep; Employee burnout</p>
<p>Q7 – What are the proposed timelines and budget for your top priority projects?</p>	<p>(1)(a) 3 months - €520k (b) 5 months - €100k (2)(a) 24 months - \$5m US (b) 12 months - \$1.5m US (3) No information given (4)(a) 6 months - €2m (b) 3 months - €250k (5) No information given (6)(a) 12 months - €500k (b) 3 months - €40k (7)(a) 12 months - €380k (b) 12 months - €200k (8)(a) 11 months - €1.06m (b) 36 months - €11m (9)(a) 5 months - budget N/A (b) 2 months - €60k (10)(a) 6 months - €1.2m (b) 6 months - €50k + transaction cost after implementation (11)(a) 6-7 months - €3-4m (12)(a) 6 months - budget N/A (b) 12 months - \$US 300k (13)(a) 18 months - \$US 4-10m (b) 10 months - \$US 1m</p>
<p>Q8 – What number of projects have you successfully worked on or managed over the last 12 months ?</p>	<p>(1) 100% (leaning heavily on outsourced partner for project management skills) (2) 60% (3) 65%-75% of projects would have met the initial plan of time & cost (4) 50% (5) No information given (6) 71% (7) 100% (8) 60-65% (9) 50% (10) 85% (11) 70-80% (12) 66% (13) 0% as people are under pressure - project is delivered on time but with compromised quality</p>

Team Profile	
Question	Answer
<p>Q1. How many people report to you ?</p>	<ul style="list-style-type: none"> • 23 • 80 (globally) • 15 • 30 • 90 • 5

	<ul style="list-style-type: none"> • 3 • 4 • 1 (but lots of dotted lines) • 6 • 40 • 10 • 15
<p>Q2. How many have attended project management training ?</p>	<ul style="list-style-type: none"> • 4 • 12 • None • 5 • 25 • 3 • None • 3 • N/A • 6 • 40 • 10 • 2
<p>Q3. What was the duration of the training ?</p>	<ul style="list-style-type: none"> • 2 day • 5 day • N/A • Unknown as received on other organisation • 5 + 2 day • 2 day • N/A • 2 x 3 day • N/A • 3-4 day • 5 day • 2 day • 3 day
<p>Q4. How many of your team have project management certification ?</p>	<ul style="list-style-type: none"> • None • 4-5 • 1 • 4 • None • None • None • 0 • None • 1 • 38 • 1 • None

Company Profile	
Question	Answer
<p>Q1. Is there a project management strategy defined for this company ?</p>	<ul style="list-style-type: none"> • No • Yes • No • No • No • Yes • Yes • Yes • Yes • Currently being defined • Yes • No • Yes (PMO now dormant so strategy not necessarily followed)
<p>Q2. What are the key components of this strategy ?</p>	<ul style="list-style-type: none"> • N/A • Common and effective systems development lifecycle; Metrics to measure the consistency of project; Integrated PM training using PMO to act as guides/buddies • N/A • N/A • N/A • Training; Monitoring of project success and budgets • Training; Monitoring of project success and budgets • • Risk identification; Requirements definition; Task management (Note: unsure of PM strategy content) • Pursuit of best practice; Consistent improvement • Not yet available • Increasing project management capability; People training and career planning; Methodologies • N/A • N/A
<p>Q3. What is the project management method employed by this organisation ?</p>	<ul style="list-style-type: none"> • Bespoke method • Bespoke method • IBM method • PM2 • Bespoke method

	<ul style="list-style-type: none"> • Bespoke method • Bespoke method • Bespoke method • Prince2 • Reduced version of DMR Macroscopic • PM2 (based on PMBOK) • Bespoke method • No organisational wide standard
<p>Q4. Is this method supported and applied by all organisational divisions in the management of projects ?</p>	<ul style="list-style-type: none"> • No • No • IT only • IT only • Some functions • No • No • No • Yes • No • Yes • Yes • No
<p>Q5. How was the method selected by the company ?</p>	<ul style="list-style-type: none"> • In house engineers dreamt it up • Developed internally • Defaulted to IBM method due to relationship with IBM • No formal selection process – introduced by CTO • Method ‘imposed’ by consultants • External consultants • External consultants • External consultants • Selected because it was possible for the organisation to obtain formal certification in PRINCE2 and also many customers use PRINCE2 • Previous manager introduced it based on its used on a big project • Strong company links to PMI • VP of Operations working alone and then selling concept to exec. staff • N/A
<p>Q6. How would you rate compliance by the company to this method ?</p>	<ul style="list-style-type: none"> • Weak • Moderate • Stringent • Moderate/Stringent • Moderate • Weak

	<ul style="list-style-type: none"> • Weak • Weak • Moderate/Stringent • Weak • Stringent • Moderate • N/A
<p>Q7. How does the company measure the effectiveness of the method ?</p>	<ul style="list-style-type: none"> • Effectiveness never measured • Very light – there is a process which states this needs to be measured and monitored • Effectiveness never measured • Effectiveness never measured • Effectiveness never measured • Effectiveness never measured • Effectiveness never measured • Effectiveness never measured • Effectiveness never measured • Weekly project review cycle and monthly project review reports • External auditors selectively review projects • No empirical data yet • Effectiveness never measured • Effectiveness never measured
<p>Q8. Is there a project office in the organisation?</p>	<ul style="list-style-type: none"> • No • Yes • No • Yes • Yes • Yes • Yes • No • Yes • No • Yes • Yes (in the US) • Yes (in the US but now dormant)
<p>Q9. How would you rate the maturity of the project office ?</p>	<ul style="list-style-type: none"> • N/A • <2 years • N/A • < 2 years • 2-4 years • < 2years • < 2 years • N/A • > 4 years • N/A • > 4 years

	<ul style="list-style-type: none"> • < 2 years • < 2 years
<p>Q10. What are the functions of the project office ?</p>	<ul style="list-style-type: none"> • N/A • Doc. to be sent on • N/A • Question not asked • ICT org. is closely aligned with the objectives of the business; Consistency + standardisation wrt managing projects; Cost effective means of managing projects; Repository for project doc • Collate project materials; Monitor project progress; Monitor project expenditure; First port of call for project initiatives; Carry out feasibility studies for projects • Collate project materials; Monitor project progress; Monitor project expenditure; First port of call for project initiatives; Carry out feasibility studies for projects; Put in bids for funding to ERHA; QA; Contract Negotiations • N/A • To ensure PM delivers to his commitments; Documentation is filed and sent to appropriate people; Carries out project management admin and facilitates weekly and monthly reviews • N/A • Governance; Reporting; Training • Administration; Project reviews • N/A
<p>Q11. What is the level of executive management support for project management ?</p>	<ul style="list-style-type: none"> • Moderate – there is awareness that there is an issue • High - sometimes only lip-service paid • Strong support where the business opportunity arises • High • Accepted at board level that it is important • None • Some support • Recognises need for effective project management but also feels that work done so far is insufficient • Exec. Mgt. believes that project mgt is good (except when it gets in the way of my numbers)

	<ul style="list-style-type: none"> • Moderate • High • Very enthusiastic • Exec. Mgt. believes that project mgt is a 'good thing' but not necessarily the political will to roll it out corporate wide
<p>Q12. What is the level of awareness across management regarding the % of project success and failure ?</p>	<ul style="list-style-type: none"> • None • High • Very little • Question not asked • No metrics programme in place but still a level of awareness wrt projects that are failing or have failed • None • None • Very little • High • Don't know • High • Poor • Very Little
<p>Q13. What is the level of awareness across management regarding the cost of project management failure ?</p>	<ul style="list-style-type: none"> • None • High • None • High • None • None • None • None • Very Little • Low • Reasonable level of awareness as managers budgets are monitored so closely • High • Poor • Very Little

APPENDIX B – INTERVIEW RESULTS FOR STAGE 3.0 OF TEST PROCESS

Introduction

This questionnaire will be used as the primary driver for a semi-structured interview process to be undertaken between Karen Bolger and a sample group of employees within the test organisation (estimated sample size – 28).

The interviews will take place either on a one-to-one basis or by telephone (some of the employees in the test sample are shift workers and may not be available for direct interview)

Each interview will last approximately 45-60 minutes and will be taped where possible.

The objective of the interview is to establish some baseline information regarding the interviewees before they undertake a bespoke 2-stage process of project management training built around a bespoke project management methodology.

This baseline information will then be used to measure improvement post-training, in the interviewees project management knowledge and in particular, their ability to execute their project responsibilities (as a manager or team member), more effectively. I will also attempt to measure if there is any improvement, post training, in the outcome of the projects on which the participants subsequently work.

If there is improvement I will try to establish if there is a relationship between the improvement and :

- The training approach
- The bespoke project management methodology
- The training approach and the bespoke project management methodology combined

It should be acknowledged that any suggested relationship between improvements in project outcomes and the test training approach/project management methodology would need to be supported by additional work involving a larger sample size of organisations, test projects and individuals to establish a definite relationship. As there is only 1 test organisation and a relatively small group of 5 projects involved in this experiment, it was not appropriate to conduct a quantitative investigation in this instance.

It should also be recognised that the design of this questionnaire was influenced by the live environment in which it will be executed – there is a distinct possibility that this live environment may present me with the following problems –

- The survey participants may be unwilling to engage fully with the survey due to their perception of them 'doing me a favour' – i.e. there was no benefit for them
- I would probably only have an opportunity to conduct each interview once – therefore there would be little opportunity to clarify responses in follow-up interviews
- Time limitations – the survey participants may have very little time to give to the questionnaire
- Implications for the survey participants – would their opinions be reported elsewhere (to their boss or publicly) ?

These potential issues fed into the design of the questionnaire and I was mindful that the questions had to be clear; relevant; concise and still gather as much information as possible regarding the project environment being surveyed and the level of project management experience of the individual being surveyed.

In addition, research conducted by the Standish Group indicates that executive management support (Standish Group 2001) can increase the likelihood of improved project outcomes. I also therefore included questions relating to this in the questionnaire.

The target audience for this questionnaire is :

- Project managers
- Individuals who are unofficially responsible for managing IT or Business projects
- Middle and senior management
- Project team members

Questionnaire Results – Respondent 1.

Question	Answer
Q1. Nationality	Irish
Q2. Age bracket	35-45
Q3. Job title	Receiving Clerk
Q4. Duration in current position	3.5 years
Q5. Duration working with test organisation	5 years
Q6. Duration working in industry	25 years
Q7. Level of education	Post-primary
Q8. Score your level of project management knowledge	Low
Q9. Define your understanding of a project	Its looking at how we do things and breaking them down to see if you can make it operate more efficiently
Q10. Define your understanding of project management	Someone given a roll to direct traffic & oversee the team progress
Q11. Define your understanding of project management success	If there are improvements made on what they were looking at – efficiency; cost reduction etc.
Q12. What are the different types of project risks ?	Commitment by the team – if things aren't being done
Q13. Outline how you would manage project risks	Don't know
Q14. Outline how you would manage project change requests	Don't know
Q15. Do you see any benefits to implementing a project management methodology	Always room for improvement – because you're doing it so long, doesn't mean there is no room for improvement
Q16. Have you attended project management training ?	No
Q17. Duration of training	N/A
Q18. Form of training	N/A
Q19. Training approach	N/A
Q20. Score the effectiveness of this training ...	N/A
Q21. What do you believe to be the positive aspects of the project management training which you attended ?	N/A
Q22. What do you believe to be the negative aspects of the project management training which you attended ?	N/A

Q23. Project management certification ?	None
Q24. How many project shave you worked on since you commenced employment with the test organisation ?	None
Q25. Rate the outcome of these projects	N/A
Q26. Within this organisation, what do you see as being the main problem areas for projects ?	Being allotted time to dedicate to the project as people would have their normal days work to do as well as the project
Q27. What do you think is required for a project to have a positive outcome ?	A good team A good project manager
Q28. How many projects do you currently manage ?	0
Q29. How many projects are you currently involves in as a team member ?	1
Q30. How many projects are you currently involved in as a sponsor or business owner ?	None
Q31. What is the proposed timeline and budget for each of these projects ?	Timeline = 2 months Budget = Don't know
Q32. What is the project management method employed by this organisation ?	Not aware of any
Q33. Is this method supported and applied across all functions in the organisation (IT & Business) in the management of projects ?	N/A
Q34. How was the method selected by the organisation ?	N/A
Q35. How would you rate compliance by the organisation to the method ?	N/A
Q36. How does the company measure the effectiveness of the project management method ?	N/A
Q37. How would you rate the effectiveness of the method wrt the following ... ?	N/A
Q38. What do you believe to be the positive aspects of this project management method ?	N/A
Q39. What do you believe to be the problem areas of this method?	N/A

Q40. What is the level of management support for formalised project management practice within the organisation ?	Strong support – interested in looking at projects which will improve efficiency
Q41. What is the level of awareness across management (middle & executive; business & IT) regarding the % of project success and failure within the organisation ?	(Guess) – fairly strong
Q42. What is the level of awareness across management (middle & executive; business & IT) regarding the cost of project failure to the organisation ?	“I’m sure it would be high on the agenda”
Q43. Please add any other details that you believe might be of benefit to this project management audit	None

Questionnaire Results – Respondent 2.

Question	Answer
Q1. Nationality	Irish
Q2. Age bracket	35-45
Q3. Job title	Quality Technician
Q4. Duration in current position	2 months
Q5. Duration working with test organisation	7 years
Q6. Duration working in industry	25 years
Q7. Level of education	Intermediate certificate
Q8. Score your level of project management knowledge	Low (Range 1->2)
Q9. Define your understanding of a project	If there is any easier way to do something, it constitutes a project
Q10. Define your understanding of project management	Don’t know
Q11. Define your understanding of project management success	Don’t know
Q12. What are the different types of project risks ?	<ul style="list-style-type: none"> • Time allocated to the project • Adequate training • Backing required from management
Q13. Outline how you would manage project risks	Continuously supervising the project to watch it, so that it wouldn’t fall down

Q14. Outline how you would manage project change requests	The team would need to discuss the change request and agree to it as being valid
Q15. Do you see any benefits to implementing a project management methodology	Yes – it improves things but it must be monitored to ensure it happens
Q16. Have you attended project management training ?	No
Q17. Duration of training	N/A
Q18. Form of training	N/A
Q19. Training approach	N/A
Q20. Score the effectiveness of this training ...	N/A
Q21. What do you believe to be the positive aspects of the project management training which you attended ?	N/A
Q22. What do you believe to be the negative aspects of the project management training which you attended ?	N/A
Q23. Project management certification ?	None
Q24. How many project shave you worked on since you commenced employment with the test organisation ?	1
Q25. Rate the outcome of these projects	<ul style="list-style-type: none"> • 3 year project • Delivered on-time for phase 1 • Ongoing so cannot say yest if delivered within budget • Delivered to an acceptable quality standard
Q26. Within this organisation, what do you see as being the main problem areas for projects ?	Shipping is a problematic area – duplication of tasks. A lot of time & effort added un-necessarily. Time lost
Q27. What do you think is required for a project to have a positive outcome ?	The project must have 100% commitment & when the project is completed there is no continuous monitoring to ensure the project runs & rules are followed – reverts back to bad habits
Q28. How many projects do you currently manage ?	None

Q29. How many projects are you currently involves in as a team member ?	None
Q30. How many projects are you currently involved in as a sponsor or business owner ?	None
Q31. What is the proposed timeline and budget for each of these projects ?	N/A
Q32. What is the project management method employed by this organisation ?	They arrange the teams & there is a Team Lead in each team & there is an overseer who drives the project
Q33. Is this method supported and applied across all functions in the organisation (IT & Business) in the management of projects ?	Don't know
Q34. How was the method selected by the organisation ?	Don't know
Q35. How would you rate compliance by the organisation to the method ?	Moderate
Q36. How does the company measure the effectiveness of the project management method ?	Yes
Q37. How would you rate the effectiveness of the method wrt the following ... ?	N/A
Q38. What do you believe to be the positive aspects of this project management method ?	Unsure
Q39. What do you believe to be the problem areas of this method?	Not sufficient commitment & overseer not strong enough to enforce rules
Q40. What is the level of management support for formalised project management practice within the organisation ?	Don't know
Q41. What is the level of awareness across management (middle & executive; business & IT) regarding the % of project success and failure within the organisation ?	Don't know
Q42. What is the level of awareness across management (middle & executive; business & IT) regarding the cost of project failure to the organisation ?	Strong awareness

Q43. Please add any other details that you believe might be of benefit to this project management audit	None
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Questionnaire Results – Respondent 3.

Question	Answer
Q1. Nationality	Irish
Q2. Age bracket	45-55
Q3. Job title	Manufacturing and Maintenance Engineering Manager
Q4. Duration in current position	5 months
Q5. Duration working with test organisation	5 months
Q6. Duration working in industry	29 years
Q7. Level of education	BEng (ElecEng)
Q8. Score your level of project management knowledge	Moderate
Q9. Define your understanding of a project	Something that needs to be planned over a period of time with an objective in mind
Q10. Define your understanding of project management	The planning and management of the tasks associated with achieving that objective
Q11. Define your understanding of project management success	If you achieve the desired outcome with the planned level of input
Q12. What are the different types of project risks ?	<ul style="list-style-type: none"> • Poor planning • Insufficient resources • Schedule slippage
Q13. Outline how you would manage project risks	Legislate for regular reviews to ensure you are keeping in track; Understanding any exclusions and provide for addressing them
Q14. Outline how you would manage project change requests	Ensure that you have a proper review process in place so that any of the affected stakeholders are part of approvals group & implications of change are understood
Q15. Do you see any benefits to implementing a project management methodology	It depends on the project – there are projects that need careful & proper project management. There can be a tendency to classify something as a project when it is not
Q16. Have you attended project management training ?	No

Q17. Duration of training	N/A
Q18. Form of training	N/A
Q19. Training approach	N/A
Q20. Score the effectiveness of this training ...	N/A
Q21. What do you believe to be the positive aspects of the project management training which you attended ?	N/A
Q22. What do you believe to be the negative aspects of the project management training which you attended ?	N/A
Q23. Project management certification ?	None
Q24. How many project shave you worked on since you commenced employment with the test organisation ?	6
Q25. Rate the outcome of these projects	<ul style="list-style-type: none"> • Project 1 – Delivered on time (tentative yes) Delivered within budget – (tentative yes) Delivered to an acceptable quality standard – yes • Project 2 – Time – ongoing but behind schedule at the moment Budget – modest cost implications so no attention paid to budget Quality – ongoing so cannot say at present • Project 3 – Time – ongoing Budget – ongoing Quality – ongoing
Q26. Within this organisation, what do you see as being the main problem areas for projects ?	<ul style="list-style-type: none"> • Resource availability • A need for more project planning
Q27. What do you think is required for a project to have a positive outcome ?	<ul style="list-style-type: none"> • A good initial plan • Adequate resources • Careful tracking
Q28. How many projects do you currently manage ?	4

Q29. How many projects are you currently involves in as a team member ?	4
Q30. How many projects are you currently involved in as a sponsor or business owner ?	None
Q31. What is the proposed timeline and budget for each of these projects ?	Timeline = 6 months; 3 months; 6 months Budget = Unavailable
Q32. What is the project management method employed by this organisation ?	No single methodology "but lots of meetings"
Q33. Is this method supported and applied across all functions in the organisation (IT & Business) in the management of projects ?	N/A
Q34. How was the method selected by the organisation ?	N/A
Q35. How would you rate compliance by the organisation to the method ?	N/A
Q36. How does the company measure the effectiveness of the project management method ?	N/A
Q37. How would you rate the effectiveness of the method wrt the following ... ?	N/A
Q38. What do you believe to be the positive aspects of this project management method ?	N/A
Q39. What do you believe to be the problem areas of this method?	N/A
Q40. What is the level of management support for formalised project management practice within the organisation ?	Quite high
Q41. What is the level of awareness across management (middle & executive; business & IT) regarding the % of project success and failure within the organisation ?	Quite high
Q42. What is the level of awareness across management (middle & executive; business & IT) regarding the cost of project failure to the organisation ?	Moderate
Q43. Please add any other details that you believe might be of benefit to this project management audit	None

Questionnaire Results – Respondent 4.

Question	Answer
Q1. Nationality	Irish
Q2. Age bracket	25-35
Q3. Job title	Business Analyst
Q4. Duration in current position	2 years
Q5. Duration working with test organisation	6 years
Q6. Duration working in industry	7 years
Q7. Level of education	BA Dip in Proj. Mgt
Q8. Score your level of project management knowledge	Moderate
Q9. Define your understanding of a project	Temporary endeavour to get to a specific objective Definable with a start and an end
Q10. Define your understanding of project management	Managing the whole project from resources to goals and everything in between
Q11. Define your understanding of project management success	Achieving your target within time, cost and quality
Q12. What are the different types of project risks ?	<ul style="list-style-type: none"> • Need a well-defined scope – lack of definition • External factors – people leaving etc. • Environmental factors
Q13. Outline how you would manage project risks	<ul style="list-style-type: none"> • From the start ensure buy-in on scope; involve the stakeholders • Conduct risk assessment to monitor risk throughout project
Q14. Outline how you would manage project change requests	<ul style="list-style-type: none"> • Define a change procedure at the start of the project • What constitutes an acceptable change
Q15. Do you see any benefits to implementing a project management methodology	Yes – good to have the company focussed – consistent methodology would make life easier
Q16. Have you attended project management training ?	Yes
Q17. Duration of training	6 months

Q18. Form of training	Off-the-shelf
Q19. Training approach	Theory+exercises
Q20. Score the effectiveness of this training ...	<ul style="list-style-type: none"> • Improving proj. mgt. knowledge – very effective • Improving your ability to execute your role within a project – moderately effective • As a consequence of training, project quality was improved for those projects on which you subsequently worked – very effective • As a consequence of training, project communication was improved for those projects on which you subsequently worked – very effective • As a consequence of training, project documentation was improved for those projects on which you subsequently worked – very effective • Training improved your productivity – very effective • As a consequence of training, average project outcome was improved for those projects on which you subsequently worked – very effective
Q21. What do you believe to be the positive aspects of the project management training which you attended ?	Very applicable to what I am doing in my job
Q22. What do you believe to be the negative aspects of the project management training which you attended ?	None
Q23. Project management certification ?	PMP after training is completed

Q24. How many project shave you worked on since you commenced employment with the test organisation ?	20
Q25. Rate the outcome of these projects	<ul style="list-style-type: none"> • Project 1 – delivered on time; to budget and to an acceptable quality standard • Project 2 – as project 1 • Project 3 – not delivered on time; but delivered to budget and to an acceptable quality standard
Q26. Within this organisation, what do you see as being the main problem areas for projects ?	<ul style="list-style-type: none"> • No common methodology used • No consistency in which projects are being managed • Lack of qualified project managers
Q27. What do you think is required for a project to have a positive outcome ?	<ul style="list-style-type: none"> • Clear objectives • Clear plan • Good scope • Good team
Q28. How many projects do you currently manage ?	1
Q29. How many projects are you currently involves in as a team member ?	3
Q30. How many projects are you currently involved in as a sponsor or business owner ?	1
Q31. What is the proposed timeline and budget for each of these projects ?	<ul style="list-style-type: none"> • Project 1 – Timeline = 6 months Budget = €2 million • Project 2 – Timeline = 6 months Budget – None • Project 3 – Timeline = 9 months Budget = None
Q32. What is the project management method employed by this organisation ?	Nothing consistent
Q33. Is this method supported and applied across all functions in the organisation (IT & Business) in the management of projects ?	N/A

Q34. How was the method selected by the organisation ?	N/A
Q35. How would you rate compliance by the organisation to the method ?	N/A
Q36. How does the company measure the effectiveness of the project management method ?	N/A
Q37. How would you rate the effectiveness of the method wrt the following ... ?	N/A
Q38. What do you believe to be the positive aspects of this project management method ?	N/A
Q39. What do you believe to be the problem areas of this method?	N/A
Q40. What is the level of management support for formalised project management practice within the organisation ?	High level of support to get it going
Q41. What is the level of awareness across management (middle & executive; business & IT) regarding the % of project success and failure within the organisation ?	Moderate
Q42. What is the level of awareness across management (middle & executive; business & IT) regarding the cost of project failure to the organisation ?	Moderate
Q43. Please add any other details that you believe might be of benefit to this project management audit	None

Questionnaire Results – Respondent 5.

Question	Answer
Q1. Nationality	Irish
Q2. Age bracket	25-35
Q3. Job title	Maintenance Technician
Q4. Duration in current position	1 year
Q5. Duration working with test organisation	1 year
Q6. Duration working in industry	5 years
Q7. Level of education	Post-primary Dip ElecEng

Q8. Score your level of project management knowledge	Low
Q9. Define your understanding of a project	Something undertaken by an individual or a team to improve a process
Q10. Define your understanding of project management	The way that a project is handled from where you start until it is done
Q11. Define your understanding of project management success	Don't understand question
Q12. What are the different types of project risks ?	If the project became too expensive or ran into problems that it wasn't feasible
Q13. Outline how you would manage project risks	Sit down before project is undertaken & do brainstorm on where the project could meet its downfalls
Q14. Outline how you would manage project change requests	See what is being added to the project spec. & if it throws your project off-line then abandon it
Q15. Do you see any benefits to implementing a project management methodology	Yes it is beneficial as you can see where you are going with projects
Q16. Have you attended project management training ?	No
Q17. Duration of training	N/A
Q18. Form of training	N/A
Q19. Training approach	N/A
Q20. Score the effectiveness of this training ...	N/A
Q21. What do you believe to be the positive aspects of the project management training which you attended ?	N/A
Q22. What do you believe to be the negative aspects of the project management training which you attended ?	N/A
Q23. Project management certification ?	None
Q24. How many project have you worked on since you commenced employment with the test organisation ?	None
Q25. Rate the outcome of these projects	N/A
Q26. Within this organisation, what do you see as being the main problem areas for projects ?	Manpower – lack of manpower

Q27. What do you think is required for a project to have a positive outcome ?	If its managed properly from the start with a process defined from start->finish, then project will be achieved on-time
Q28. How many projects do you currently manage ?	None
Q29. How many projects are you currently involves in as a team member ?	None
Q30. How many projects are you currently involved in as a sponsor or business owner ?	None
Q31. What is the proposed timeline and budget for each of these projects ?	N/A
Q32. What is the project management method employed by this organisation ?	TPM – Test Project Management
Q33. Is this method supported and applied across all functions in the organisation (IT & Business) in the management of projects ?	Yes
Q34. How was the method selected by the organisation ?	It was put into place and proved successful in another company and test company adopted it
Q35. How would you rate compliance by the organisation to the method ?	Moderate
Q36. How does the company measure the effectiveness of the project management method ?	Yes
Q37. How would you rate the effectiveness of the method wrt the following ... ?	<ul style="list-style-type: none"> • Improving average project outcome – moderately effective • Improving project quality – moderately effective • Improving project communication – moderately effective • Improving doc. quality – ineffective • Improving productivity of team and manager – moderately effective
Q38. What do you believe to be the positive aspects of this project management method ?	It improves productivity on test floor and creates a sense of teamwork
Q39. What do you believe to be the problem areas of this method?	None

Q40. What is the level of management support for formalised project management practice within the organisation ?	Poor
Q41. What is the level of awareness across management (middle & executive; business & IT) regarding the % of project success and failure within the organisation ?	Poor
Q42. What is the level of awareness across management (middle & executive; business & IT) regarding the cost of project failure to the organisation ?	Poor
Q43. Please add any other details that you believe might be of benefit to this project management audit	None

Questionnaire Results – Respondent 6.

Question	Answer
Q1. Nationality	British
Q2. Age bracket	< 25 years
Q3. Job title	Student Placement
Q4. Duration in current position	3 months
Q5. Duration working with test organisation	3 months
Q6. Duration working in industry	3 months
Q7. Level of education	A-Levels Currently undertaking BEng (Elec.Eng)
Q8. Score your level of project management knowledge	Low
Q9. Define your understanding of a project	You have a problem & finding a working solution
Q10. Define your understanding of project management	<ul style="list-style-type: none"> • How a project is oriented • How roles are given
Q11. Define your understanding of project management success	Efficiency in which the project is executed
Q12. What are the different types of project risks ?	If you don't have the right person for the project
Q13. Outline how you would manage project risks	Risk should be kept in mind Undertake risk assessment
Q14. Outline how you would manage project change requests	Take overview of project and assess if change request will have large effect down the line

Q15. Do you see any benefits to implementing a project management methodology	Yes – efficiency (improving)
Q16. Have you attended project management training ?	No
Q17. Duration of training	N/A
Q18. Form of training	N/A
Q19. Training approach	N/A
Q20. Score the effectiveness of this training ...	N/A
Q21. What do you believe to be the positive aspects of the project management training which you attended ?	N/A
Q22. What do you believe to be the negative aspects of the project management training which you attended ?	N/A
Q23. Project management certification ?	None
Q24. How many projects have you worked on since you commenced employment with the test organisation ?	1
Q25. Rate the outcome of these projects	Ongoing so cannot say
Q26. Within this organisation, what do you see as being the main problem areas for projects ?	From what I have seen, they are fairly organised
Q27. What do you think is required for a project to have a positive outcome ?	No opinion
Q28. How many projects do you currently manage ?	None
Q29. How many projects are you currently involved in as a team member ?	1
Q30. How many projects are you currently involved in as a sponsor or business owner ?	None
Q31. What is the proposed timeline and budget for each of these projects ?	Timeline = 3 months Budget = Don't know
Q32. What is the project management method employed by this organisation ?	Not that I know of but I'm sure they probably do
Q33. Is this method supported and applied across all functions in the organisation (IT & Business) in the management of projects ?	N/A

Q34. How was the method selected by the organisation ?	N/A
Q35. How would you rate compliance by the organisation to the method ?	N/A
Q36. How does the company measure the effectiveness of the project management method ?	N/A
Q37. How would you rate the effectiveness of the method wrt the following ... ?	N/A
Q38. What do you believe to be the positive aspects of this project management method ?	N/A
Q39. What do you believe to be the problem areas of this method?	N/A
Q40. What is the level of management support for formalised project management practice within the organisation ?	Don't know
Q41. What is the level of awareness across management (middle & executive; business & IT) regarding the % of project success and failure within the organisation ?	Don't know
Q42. What is the level of awareness across management (middle & executive; business & IT) regarding the cost of project failure to the organisation ?	Don't know
Q43. Please add any other details that you believe might be of benefit to this project management audit	None

Questionnaire Results – Respondent 7.

Question	Answer
Q1. Nationality	Irish
Q2. Age bracket	25-35
Q3. Job title	Team Leader
Q4. Duration in current position	2 years
Q5. Duration working with test organisation	6 years
Q6. Duration working in industry	6 years
Q7. Level of education	Post-primary Currently undertaking Diploma in Technology Management
Q8. Score your level of project management knowledge	Low (Range 1->2)
Q9. Define your understanding of a project	Not too sure – Something goes wrong and a group of people come together to fix or improve problems
Q10. Define your understanding of project management	Don't know
Q11. Define your understanding of project management success	Doesn't understand question
Q12. What are the different types of project risks ?	Management buy-in
Q13. Outline how you would manage project risks	Give it the time Be prepared to take a hit in output in the beginning – set aside enough time at the start to put effort into project
Q14. Outline how you would manage project change requests	Sit and look at pro's and con's – Would it add or take something from project Needs to discuss with project team
Q15. Do you see any benefits to implementing a project management methodology	Yes – it highlights things that otherwise would not be highlighted
Q16. Have you attended project management training ?	No
Q17. Duration of training	N/A
Q18. Form of training	N/A
Q19. Training approach	N/A
Q20. Score the effectiveness of this training ...	N/A
Q21. What do you believe to be the positive aspects of the project management training which you attended ?	N/A

Q22. What do you believe to be the negative aspects of the project management training which you attended ?	N/A
Q23. Project management certification ?	None
Q24. How many project shave you worked on since you commenced employment with the test organisation ?	2
Q25. Rate the outcome of these projects	<ul style="list-style-type: none"> • Project 1 – delivered on time – No Delivered within budget – I don't know Delivered to an acceptable quality standard – “for a while” • Project 2 On time – ongoing Within budget – ongoing To quality – ongoing
Q26. Within this organisation, what do you see as being the main problem areas for projects ?	Priorities change on a daily, weekly basis
Q27. What do you think is required for a project to have a positive outcome ?	An extremely focuses team and manager
Q28. How many projects do you currently manage ?	None
Q29. How many projects are you currently involves in as a team member ?	1
Q30. How many projects are you currently involved in as a sponsor or business owner ?	None
Q31. What is the proposed timeline and budget for each of these projects ?	Timeline = 2 years (minimum) Budget = Don't know
Q32. What is the project management method employed by this organisation ?	“Feet first”
Q33. Is this method supported and applied across all functions in the organisation (IT & Business) in the management of projects ?	Yes – “feet first”
Q34. How was the method selected by the organisation ?	N/A
Q35. How would you rate compliance by the organisation to the method ?	N/A

Q36. How does the company measure the effectiveness of the project management method ?	N/A
Q37. How would you rate the effectiveness of the method wrt the following ... ?	N/A
Q38. What do you believe to be the positive aspects of this project management method ?	N/A
Q39. What do you believe to be the problem areas of this method?	N/A
Q40. What is the level of management support for formalised project management practice within the organisation ?	Low-medium
Q41. What is the level of awareness across management (middle & executive; business & IT) regarding the % of project success and failure within the organisation ?	Awareness is there but “things changed” & “projects put on hold”
Q42. What is the level of awareness across management (middle & executive; business & IT) regarding the cost of project failure to the organisation ?	Low
Q43. Please add any other details that you believe might be of benefit to this project management audit	None

Questionnaire Results – Respondent 8.

Question	Answer
Q1. Nationality	Irish
Q2. Age bracket	25-35
Q3. Job title	Test Manager
Q4. Duration in current position	3.5 years
Q5. Duration working with test organisation	4 years
Q6. Duration working in industry	8 years
Q7. Level of education	BBS Currently undertaking MBA
Q8. Score your level of project management knowledge	Moderate
Q9. Define your understanding of a project	The process in which you wish to get to an end goal

Q10. Define your understanding of project management	An organised framework for “getting things done”
Q11. Define your understanding of project management success	Achieving what you set out to do
Q12. What are the different types of project risks ?	<ul style="list-style-type: none"> • Out of scope • Lose motivation • Wrong people in the group • Lack of outside support • Trying to do too much and not enough time for project
Q13. Outline how you would manage project risks	<ul style="list-style-type: none"> • Type of person to “get on with it” • Make sure you have correct buy-in from outset
Q14. Outline how you would manage project change requests	<ul style="list-style-type: none"> • Call a meeting with guys from project • Assess relevancy and allow team to decide
Q15. Do you see any benefits to implementing a project management methodology	Absolutely – Test company is project oriented – people should know how to run a project properly and everyone to “do the same thing”
Q16. Have you attended project management training ?	No
Q17. Duration of training	N/A
Q18. Form of training	N/A
Q19. Training approach	N/A
Q20. Score the effectiveness of this training ...	N/A
Q21. What do you believe to be the positive aspects of the project management training which you attended ?	N/A
Q22. What do you believe to be the negative aspects of the project management training which you attended ?	N/A
Q23. Project management certification ?	None
Q24. How many project have you worked on since you commenced employment with the test organisation ?	10 (approx.)
Q25. Rate the outcome of these projects	<ul style="list-style-type: none"> • Project 1 – delivered on time – No Delivered within budget –

	<p>Budget never an issue Delivered to an acceptable quality standard – yes</p> <ul style="list-style-type: none"> • Project 2 On time – No Within budget – No budget constraint To quality – yes • Project 3 On time – No Within budget – No To quality – yes
Q26. Within this organisation, what do you see as being the main problem areas for projects ?	<ul style="list-style-type: none"> • Not enough time to complete projects • Sometimes scope creep
Q27. What do you think is required for a project to have a positive outcome ?	To have correct team members Support from senior management, peers and people in the are
Q28. How many projects do you currently manage ?	3
Q29. How many projects are you currently involves in as a team member ?	5
Q30. How many projects are you currently involved in as a sponsor or business owner ?	5
Q31. What is the proposed timeline and budget for each of these projects ?	<ul style="list-style-type: none"> • Project 1 Timeline = 3 months Budget = N/A • Project 2 Timeline = 6 months Budget = N/A • Project 3 Timeline = 3 months Budget = N/A
Q32. What is the project management method employed by this organisation ?	“There isn’t one”
Q33. Is this method supported and applied across all functions in the organisation (IT & Business) in the management of projects ?	N/A
Q34. How was the method selected by the organisation ?	N/A
Q35. How would you rate compliance by the organisation to the method ?	N/A

Q36. How does the company measure the effectiveness of the project management method ?	N/A
Q37. How would you rate the effectiveness of the method wrt the following ... ?	N/A
Q38. What do you believe to be the positive aspects of this project management method ?	N/A
Q39. What do you believe to be the problem areas of this method?	N/A
Q40. What is the level of management support for formalised project management practice within the organisation ?	High
Q41. What is the level of awareness across management (middle & executive; business & IT) regarding the % of project success and failure within the organisation ?	High
Q42. What is the level of awareness across management (middle & executive; business & IT) regarding the cost of project failure to the organisation ?	High
Q43. Please add any other details that you believe might be of benefit to this project management audit	None

Questionnaire Results – Respondent 9.

Question	Answer
Q1. Nationality	Irish
Q2. Age bracket	< 25 years
Q3. Job title	Planner
Q4. Duration in current position	2 months
Q5. Duration working with test organisation	2 months
Q6. Duration working in industry	14 months
Q7. Level of education	BEng (ElecEng)
Q8. Score your level of project management knowledge	Low

Q9. Define your understanding of a project	A piece of work with a set of objectives & a set of goals to be achieved for the duration of the project & by the end of the project
Q10. Define your understanding of project management	Its reaching your targets within a specific timeframe Planning your project with different time constraints Setting targets for your project Timing your project Breaking it into different areas
Q11. Define your understanding of project management success	Delivering on the objectives of the project If you meet > 60% of objectives, then you are successful
Q12. What are the different types of project risks ?	Timing – will we complete the project on-time Look at different areas where you might come unstuck
Q13. Outline how you would manage project risks	If I could identify risk early in the project, I would give myself more time to complete the task Look at getting outside expert help if required
Q14. Outline how you would manage project change requests	Take it to other team members to discuss to assess what change requests would mean to project. If request is vital to project or test company I would give it serious consideration
Q15. Do you see any benefits to implementing a project management methodology	Yes – it would help the project members at the start to see where the project is going Critical to success of project
Q16. Have you attended project management training ?	No
Q17. Duration of training	N/A
Q18. Form of training	N/A
Q19. Training approach	N/A
Q20. Score the effectiveness of this training ...	N/A
Q21. What do you believe to be the positive aspects of the project management training which you attended ?	N/A
Q22. What do you believe to be the negative aspects of the project management training which you attended ?	N/A

Q23. Project management certification ?	None
Q24. How many project shave you worked on since you commenced employment with the test organisation ?	None
Q25. Rate the outcome of these projects	N/A
Q26. Within this organisation, what do you see as being the main problem areas for projects ?	Not enough experience of test organisation
Q27. What do you think is required for a project to have a positive outcome ?	If we could deliver on objectives of project, I would see that as success
Q28. How many projects do you currently manage ?	None
Q29. How many projects are you currently involves in as a team member ?	1
Q30. How many projects are you currently involved in as a sponsor or business owner ?	None
Q31. What is the proposed timeline and budget for each of these projects ?	Timeline = 3 months Budget = Don't know
Q32. What is the project management method employed by this organisation ?	Don't know
Q33. Is this method supported and applied across all functions in the organisation (IT & Business) in the management of projects ?	N/A
Q34. How was the method selected by the organisation ?	N/A
Q35. How would you rate compliance by the organisation to the method ?	N/A
Q36. How does the company measure the effectiveness of the project management method ?	N/A
Q37. How would you rate the effectiveness of the method wrt the following ... ?	N/A
Q38. What do you believe to be the positive aspects of this project management method ?	N/A
Q39. What do you believe to be the problem areas of this method?	N/A

Q40. What is the level of management support for formalised project management practice within the organisation ?	I couldn't say
Q41. What is the level of awareness across management (middle & executive; business & IT) regarding the % of project success and failure within the organisation ?	I would say "High"
Q42. What is the level of awareness across management (middle & executive; business & IT) regarding the cost of project failure to the organisation ?	I couldn't answer this
Q43. Please add any other details that you believe might be of benefit to this project management audit	None

Questionnaire Results – Respondent 10..

Question	Answer
Q1. Nationality	Irish
Q2. Age bracket	25 -35
Q3. Job title	Test Floor Operative
Q4. Duration in current position	18 months
Q5. Duration working with test organisation	18 months
Q6. Duration working in industry	10-12 years
Q7. Level of education	Post-primary City & Guilds in Electronics
Q8. Score your level of project management knowledge	High
Q9. Define your understanding of a project	A problem to be solved & the way you go about doing it
Q10. Define your understanding of project management	Don't know
Q11. Define your understanding of project management success	Don't know
Q12. What are the different types of project risks ?	If data you are collecting is not correct; could be severely harmful to the project
Q13. Outline how you would manage project risks	Make sure all data; timing & information is correct
Q14. Outline how you would manage project change requests	Don't know

Q15. Do you see any benefits to implementing a project management methodology	Yes – providing that the person looking after the project does not have a high workload so that they can focus on projects at hand
Q16. Have you attended project management training ?	No
Q17. Duration of training	N/A
Q18. Form of training	N/A
Q19. Training approach	N/A
Q20. Score the effectiveness of this training ...	N/A
Q21. What do you believe to be the positive aspects of the project management training which you attended ?	N/A
Q22. What do you believe to be the negative aspects of the project management training which you attended ?	N/A
Q23. Project management certification ?	None
Q24. How many project have you worked on since you commenced employment with the test organisation ?	None
Q25. Rate the outcome of these projects	N/A
Q26. Within this organisation, what do you see as being the main problem areas for projects ?	The test floor – some people have to work on projects & they cannot get a machine for troubleshooting – knock on effect on project timeline – pushes it out
Q27. What do you think is required for a project to have a positive outcome ?	Don't know
Q28. How many projects do you currently manage ?	0
Q29. How many projects are you currently involved in as a team member ?	1
Q30. How many projects are you currently involved in as a sponsor or business owner ?	None
Q31. What is the proposed timeline and budget for each of these projects ?	Project not yet started so cannot say
Q32. What is the project management method employed by this organisation ?	Haven't observed one being used

Q33. Is this method supported and applied across all functions in the organisation (IT & Business) in the management of projects ?	N/A
Q34. How was the method selected by the organisation ?	N/A
Q35. How would you rate compliance by the organisation to the method ?	N/A
Q36. How does the company measure the effectiveness of the project management method ?	N/A
Q37. How would you rate the effectiveness of the method wrt the following ... ?	N/A
Q38. What do you believe to be the positive aspects of this project management method ?	N/A
Q39. What do you believe to be the problem areas of this method?	N/A
Q40. What is the level of management support for formalised project management practice within the organisation ?	Low
Q41. What is the level of awareness across management (middle & executive; business & IT) regarding the % of project success and failure within the organisation ?	I wouldn't imagine so
Q42. What is the level of awareness across management (middle & executive; business & IT) regarding the cost of project failure to the organisation ?	I wouldn't think so
Q43. Please add any other details that you believe might be of benefit to this project management audit	None

Questionnaire Results – Respondent 11.

Question	Answer
Q1. Nationality	Irish
Q2. Age bracket	35-45
Q3. Job title	Demand Planner
Q4. Duration in current position	6 years

Q5. Duration working with test organisation	6 years
Q6. Duration working in industry	20 years
Q7. Level of education	BA in Econ. & Politics Cert in Web Design APEX qualified
Q8. Score your level of project management knowledge	Moderate
Q9. Define your understanding of a project	Identify something in a company that needs to be fixed & as a team to work together within that company to identify a resolution
Q10. Define your understanding of project management	Adhere to strict timelines ensuring that you have measurable criteria within those timelines
Q11. Define your understanding of project management success	It may cause you to change your philosophy or idea on how to run a process today
Q12. What are the different types of project risks ?	<ul style="list-style-type: none"> • People • Not having realistic timelines • No clear objective or goal • Inaccurate information
Q13. Outline how you would manage project risks	Encompassing what has been said as above
Q14. Outline how you would manage project change requests	You need to be open to listening to it but you need to assess if request if request will stop project or if it can be implemented in future phases
Q15. Do you see any benefits to implementing a project management methodology	It depends on if you get management buy-in & people see benefits of it
Q16. Have you attended project management training ?	Yes
Q17. Duration of training	1.5 days + 3 days
Q18. Form of training	Off the shelf (tailored for organisation)
Q19. Training approach	Theory + mentoring
Q20. Score the effectiveness of this training ...	<ul style="list-style-type: none"> • Improving proj. mgt. knowledge – moderately effective • Improving your ability to execute your role within a project – moderately effective

	<ul style="list-style-type: none"> • As a consequence of training, project quality was improved for those projects on which you subsequently worked – ineffective • As a consequence of training, project communication was improved for those projects on which you subsequently worked – ineffective • As a consequence of training, project documentation was improved for those projects on which you subsequently worked – moderately effective • Training improved your productivity – ineffective • As a consequence of training, average project outcome was improved for those projects on which you subsequently worked – ineffective
<p>Q21. What do you believe to be the positive aspects of the project management training which you attended ?</p>	<ul style="list-style-type: none"> • It made you think outside of the box • Teamwork – people were assigned to training who may not have been involved in projects before – it gave them an opportunity to make suggestions in a “safe” environment – increased confidence for work on future projects
<p>Q22. What do you believe to be the negative aspects of the project management training which you attended ?</p>	<p>None</p>
<p>Q23. Project management certification ?</p>	<p>None</p>
<p>Q24. How many project shave you worked on since you commenced employment with the test organisation ?</p>	<p>30+</p>

<p>Q25. Rate the outcome of these projects</p>	<ul style="list-style-type: none"> • Project 1 – delivered on time – Yes Delivered within budget – No budget Delivered to an acceptable quality standard – Yes • Project 2 – delivered on time – Yes Delivered within budget – No budget Delivered to an acceptable quality standard – Yes • Project 3 – delivered on time – Yes Delivered within budget – No budget Delivered to an acceptable quality standard – Yes
<p>Q26. Within this organisation, what do you see as being the main problem areas for projects ?</p>	<ul style="list-style-type: none"> • “Almost” acceptable not to meet timelines • Resources – getting the right people and getting them to commit to timeline • Management – total management commitment
<p>Q27. What do you think is required for a project to have a positive outcome ?</p>	<ul style="list-style-type: none"> • Need the right project manager who is open to listening to suggestions but is able to move the project along • Ensuring you meet the deadline set
<p>Q28. How many projects do you currently manage ?</p>	<p>3</p>
<p>Q29. How many projects are you currently involves in as a team member ?</p>	<p>3</p>
<p>Q30. How many projects are you currently involved in as a sponsor or business owner ?</p>	<p>1</p>
<p>Q31. What is the proposed timeline and budget for each of these projects ?</p>	<ul style="list-style-type: none"> • Project 1 Timeline = Ongoing Budget = No budget

	<ul style="list-style-type: none"> • Project 2 Timeline = 3 months Budget = No budget • Project 3 Timeline = 6 months Budget = No budget
Q32. What is the project management method employed by this organisation ?	I don't feel there is one
Q33. Is this method supported and applied across all functions in the organisation (IT & Business) in the management of projects ?	N/A
Q34. How was the method selected by the organisation ?	N/A
Q35. How would you rate compliance by the organisation to the method ?	N/A
Q36. How does the company measure the effectiveness of the project management method ?	N/A
Q37. How would you rate the effectiveness of the method wrt the following ... ?	N/A
Q38. What do you believe to be the positive aspects of this project management method ?	N/A
Q39. What do you believe to be the problem areas of this method?	N/A
Q40. What is the level of management support for formalised project management practice within the organisation ?	Poor
Q41. What is the level of awareness across management (middle & executive; business & IT) regarding the % of project success and failure within the organisation ?	I don't think they know
Q42. What is the level of awareness across management (middle & executive; business & IT) regarding the cost of project failure to the organisation ?	I don't think they know – in the core group of projects they would know but outside of this core group they wouldn't
Q43. Please add any other details that you believe might be of benefit to this project management audit	None

Questionnaire Results – Respondent 12.

Question	Answer
Q1. Nationality	Irish
Q2. Age bracket	25-35
Q3. Job title	Shift Supervisor
Q4. Duration in current position	2 years
Q5. Duration working with test organisation	5 years
Q6. Duration working in industry	14 years
Q7. Level of education	Post-primary
Q8. Score your level of project management knowledge	Low
Q9. Define your understanding of a project	Something that is set up to try and improve things
Q10. Define your understanding of project management	I don't know
Q11. Define your understanding of project management success	Pass or Fail
Q12. What are the different types of project risks ?	Don't know
Q13. Outline how you would manage project risks	Don't know
Q14. Outline how you would manage project change requests	Don't know
Q15. Do you see any benefits to implementing a project management methodology	It can't hurt
Q16. Have you attended project management training ?	No
Q17. Duration of training	N/A
Q18. Form of training	N/A
Q19. Training approach	N/A
Q20. Score the effectiveness of this training ...	N/A
Q21. What do you believe to be the positive aspects of the project management training which you attended ?	N/A
Q22. What do you believe to be the negative aspects of the project management training which you attended ?	N/A
Q23. Project management certification ?	None
Q24. How many project have you worked on since you commenced employment with the test organisation ?	None – name is down on project lists but because of shift work cannot get involved

Q25. Rate the outcome of these projects	N/A
Q26. Within this organisation, what do you see as being the main problem areas for projects ?	Projects start off great but because of workload and priorities they fall by the wayside
Q27. What do you think is required for a project to have a positive outcome ?	No opinion
Q28. How many projects do you currently manage ?	None
Q29. How many projects are you currently involved in as a team member ?	None
Q30. How many projects are you currently involved in as a sponsor or business owner ?	None
Q31. What is the proposed timeline and budget for each of these projects ?	N/A
Q32. What is the project management method employed by this organisation ?	Don't know
Q33. Is this method supported and applied across all functions in the organisation (IT & Business) in the management of projects ?	Don't know
Q34. How was the method selected by the organisation ?	Don't know
Q35. How would you rate compliance by the organisation to the method ?	N/A
Q36. How does the company measure the effectiveness of the project management method ?	N/A
Q37. How would you rate the effectiveness of the method wrt the following ... ?	N/A
Q38. What do you believe to be the positive aspects of this project management method ?	N/A
Q39. What do you believe to be the problem areas of this method?	N/A
Q40. What is the level of management support for formalised project management practice within the organisation ?	I don't think its great

Q41. What is the level of awareness across management (middle & executive; business & IT) regarding the % of project success and failure within the organisation ?	They know but nothing is rarely done
Q42. What is the level of awareness across management (middle & executive; business & IT) regarding the cost of project failure to the organisation ?	I don't know
Q43. Please add any other details that you believe might be of benefit to this project management audit	None

Questionnaire Results – Respondent 13.

Question	Answer
Q1. Nationality	Irish
Q2. Age bracket	25-35
Q3. Job title	Virtual Direct Analyst
Q4. Duration in current position	2 years
Q5. Duration working with test organisation	5.5 years
Q6. Duration working in industry	6.5 years
Q7. Level of education	BA International Business Currently undertaking Dip. in ProjMgt
Q8. Score your level of project management knowledge	Moderate
Q9. Define your understanding of a project	Define your objectives and break it down into different areas; resource buy-in
Q10. Define your understanding of project management	Ensuring you are leading the project; people involved know what they have to do; regular communications and guidance + direction
Q11. Define your understanding of project management success	A successful project would involve key project team members; a sense of commitment & mission with those team members; maintaining good relationship with team and customer & involving team members in decision making & resolution. “Involving everybody”

<p>Q12. What are the different types of project risks ?</p>	<ul style="list-style-type: none"> • If you haven't planned your project properly; scoped it properly; defined objectives • If you change your scope half-way through project – people would lose motivation • If you don't have proper resources to work on project • If you are not leading project, people will make assumptions
<p>Q13. Outline how you would manage project risks</p>	<ul style="list-style-type: none"> • Clearly define goal at the start • Task allocation to team – they know what they are doing • Planning resources in advance • Monitor progress of project milestones
<p>Q14. Outline how you would manage project change requests</p>	<p>Get team members into room to review change request & assess impact it would have on other team members; Also review wrt value to project – are there extra costs involved</p>
<p>Q15. Do you see any benefits to implementing a project management methodology</p>	<p>Absolutely – market conditions are increasing & are more demanding; accelerating rate of change and vital we stay on top; one step ahead of competition; project management is very important</p>
<p>Q16. Have you attended project management training ?</p>	<p>Yes</p>
<p>Q17. Duration of training</p>	<p>1 evening per week for 5 months</p>
<p>Q18. Form of training</p>	<p>Off-the-shelf</p>
<p>Q19. Training approach</p>	<p>Theory+exercise+mentoring</p>
<p>Q20. Score the effectiveness of this training ...</p>	<ul style="list-style-type: none"> • Improving proj. mgt. knowledge – very effective • Improving your ability to execute your role within a project – Not possible to evaluate as only starting project lead role

	<ul style="list-style-type: none"> • As a consequence of training, project quality was improved for those projects on which you subsequently worked – Not possible to evaluate as only starting project lead role • As a consequence of training, project communication was improved for those projects on which you subsequently worked – Not possible to evaluate as only starting project lead role • As a consequence of training, project documentation was improved for those projects on which you subsequently worked – Not possible to evaluate as only starting project lead role • Training improved your productivity – moderately effective • As a consequence of training, average project outcome was improved for those projects on which you subsequently worked – Not possible to evaluate as only starting project lead role
Q21. What do you believe to be the positive aspects of the project management training which you attended ?	Cannot answer as training is underway at time of interview
Q22. What do you believe to be the negative aspects of the project management training which you attended ?	Cannot answer as training is underway at time of interview
Q23. Project management certification ?	None
Q24. How many project have you worked on since you commenced employment with the test organisation ?	3

<p>Q25. Rate the outcome of these projects</p>	<ul style="list-style-type: none"> • Project 1 – delivered on time – Yes Delivered within budget – Yes Delivered to an acceptable quality standard – Yes • Project 2 On time – Yes Within budget – Yes To quality – Yes • Project 3 On time – Yes Within budget – Yes To quality – Yes
<p>Q26. Within this organisation, what do you see as being the main problem areas for projects ?</p>	<p>Resource buy-in as people are very busy and afraid to commit to projects</p>
<p>Q27. What do you think is required for a project to have a positive outcome ?</p>	<ul style="list-style-type: none"> • Objectives defined at beginning • You need to be within budget • People accountable for tasks they are doing • Commitment to budget and overall goal of project
<p>Q28. How many projects do you currently manage ?</p>	<p>1</p>
<p>Q29. How many projects are you currently involves in as a team member ?</p>	<p>1</p>
<p>Q30. How many projects are you currently involved in as a sponsor or business owner ?</p>	<p>None</p>
<p>Q31. What is the proposed timeline and budget for each of these projects ?</p>	<ul style="list-style-type: none"> • Project 1 Timeline = 6 months Budget = Sensitive info. • Project 2 Timeline = Ongoing with no fixed timeframe Budget = None that she is aware of
<p>Q32. What is the project management method employed by this organisation ?</p>	<p>“That’s a good question” “Don’t specify project management method” “Loose structure”</p>
<p>Q33. Is this method supported and applied across all functions in the organisation (IT & Business) in the management of projects ?</p>	<p>No (there is no method)</p>

Q34. How was the method selected by the organisation ?	N/A
Q35. How would you rate compliance by the organisation to the method ?	N/A
Q36. How does the company measure the effectiveness of the project management method ?	N/A
Q37. How would you rate the effectiveness of the method wrt the following ... ?	N/A
Q38. What do you believe to be the positive aspects of this project management method ?	N/A
Q39. What do you believe to be the problem areas of this method?	N/A
Q40. What is the level of management support for formalised project management practice within the organisation ?	Excellent
Q41. What is the level of awareness across management (middle & executive; business & IT) regarding the % of project success and failure within the organisation ?	Quite high as it is discussed weekly at Ops meeting
Q42. What is the level of awareness across management (middle & executive; business & IT) regarding the cost of project failure to the organisation ?	Very high – because of market conditions, very conscious of budget
Q43. Please add any other details that you believe might be of benefit to this project management audit	None

Questionnaire Results – Respondent 14.

Question	Answer
Q1. Nationality	Irish
Q2. Age bracket	35-45
Q3. Job title	Test Support Engineer
Q4. Duration in current position	4.5 years
Q5. Duration working with test organisation	4.5 years
Q6. Duration working in industry	20 years
Q7. Level of education	Dip. in Elec. Eng.

Q8. Score your level of project management knowledge	Moderate
Q9. Define your understanding of a project	A on-off type of job that has a defined time period; specific goal; based on team work to achieve that goal
Q10. Define your understanding of project management	To organise resources and people to achieve that goal
Q11. Define your understanding of project management success	Achieving the goal as specified
Q12. What are the different types of project risks ?	Directly related to goal – overruns on time & spending Project is under-resourced or committed resources not supplied The goal is not properly defined – as time goes on, need to redefine
Q13. Outline how you would manage project risks	I don't know
Q14. Outline how you would manage project change requests	Depends on its priority & relevance to the business
Q15. Do you see any benefits to implementing a project management methodology	All knowledge is useful is the simple answer but a standard approach to project management is the most important facet – a set of ground rules for everyone to follow
Q16. Have you attended project management training ?	Yes – not covering methodology but Gantt Chart & MS Project
Q17. Duration of training	2 days
Q18. Form of training	Internal training course
Q19. Training approach	Theory + exercises
Q20. Score the effectiveness of this training ...	<ul style="list-style-type: none"> • Improving proj. mgt. knowledge – moderately effective • Improving your ability to execute your role within a project – moderately effective • As a consequence of training, project quality was improved for those projects on which you subsequently worked – moderately effective

	<ul style="list-style-type: none"> • As a consequence of training, project communication was improved for those projects on which you subsequently worked – moderately effective • As a consequence of training, project documentation was improved for those projects on which you subsequently worked – Very effective • Training improved your productivity – moderately effective • As a consequence of training, average project outcome was improved for those projects on which you subsequently worked – moderately effective
Q21. What do you believe to be the positive aspects of the project management training which you attended ?	The exercise – brought it to a practical approach General information from training
Q22. What do you believe to be the negative aspects of the project management training which you attended ?	When you returned to work – no standardised approach
Q23. Project management certification ?	None
Q24. How many project shave you worked on since you commenced employment with the test organisation ?	6
Q25. Rate the outcome of these projects	<ul style="list-style-type: none"> • Project 1 – delivered on time – No Delivered within budget – Yes Delivered to an acceptable quality standard – Yes • Project 2 On time – Ongoing at the moment Within budget – No budget

	<p>To quality – Ongoing so cannot say</p> <ul style="list-style-type: none"> • Project 3 On time – No Within budget – Yes To quality – Yes • Project 4 – delivered on time – No Delivered within budget – Budget not discussed Delivered to an acceptable quality standard – Quality improved as projects related to quality • Project 5 – delivered on time – No Delivered within budget – Budget not discussed Delivered to an acceptable quality standard – Quality improved as projects related to quality • Project 6 – delivered on time – No Delivered within budget – Budget not discussed Delivered to an acceptable quality standard – Quality improved as projects related to quality
<p>Q26. Within this organisation, what do you see as being the main problem areas for projects ?</p>	<ul style="list-style-type: none"> • Poor definition • Inadequate resourcing • Too much focus on output rather than process of how you get there • If process improvement project and project is finished, people take their eye off process & it dis-integrates
<p>Q27. What do you think is required for a project to have a positive outcome ?</p>	<ul style="list-style-type: none"> • Project is defined correctly • Proper commitment from decision makers • Not too many projects • Proper communication • Resourcing is adequate to needs of project

Q28. How many projects do you currently manage ?	1
Q29. How many projects are you currently involves in as a team member ?	1
Q30. How many projects are you currently involved in as a sponsor or business owner ?	None
Q31. What is the proposed timeline and budget for each of these projects ?	Project 1 – Timeline = yesterday (3 months) Budget = Open Project 2 – Timeline = Don't know Budget = Don't know
Q32. What is the project management method employed by this organisation ?	OPM (Operations Project Management) – web based tool
Q33. Is this method supported and applied across all functions in the organisation (IT & Business) in the management of projects ?	No
Q34. How was the method selected by the organisation ?	Internally developed at senior level & rolled out
Q35. How would you rate compliance by the organisation to the method ?	Weak
Q36. How does the company measure the effectiveness of the project management method ?	No idea
Q37. How would you rate the effectiveness of the method wrt the following ... ?	<ul style="list-style-type: none"> • Improving the average project outcome – ineffective • Improving project quality – ineffective • Improving project communication – ineffective • Improving documentation quality – ineffective -> moderately effective • Improving the productivity of team and manager - ineffective
Q38. What do you believe to be the positive aspects of this project management method ?	<ul style="list-style-type: none"> • Provides a focus • Only tool available

Q39. What do you believe to be the problem areas of this method?	<ul style="list-style-type: none"> • Difficult to use • Time consuming • Not very visually effective
Q40. What is the level of management support for formalised project management practice within the organisation ?	Moderate
Q41. What is the level of awareness across management (middle & executive; business & IT) regarding the % of project success and failure within the organisation ?	No idea
Q42. What is the level of awareness across management (middle & executive; business & IT) regarding the cost of project failure to the organisation ?	Not aware
Q43. Please add any other details that you believe might be of benefit to this project management audit	None

Questionnaire Results – Respondent 15.

Question	Answer
Q1. Nationality	Irish
Q2. Age bracket	25-35
Q3. Job title	Product Control Manager
Q4. Duration in current position	18 months
Q5. Duration working with test organisation	4.5 years
Q6. Duration working in industry	15 years
Q7. Level of education	Dip. in Management Cert in Engineering
Q8. Score your level of project management knowledge	Moderate
Q9. Define your understanding of a project	A problem which needs to be solved through a list of tasks and goals
Q10. Define your understanding of project management	Overall co-ordination of all the actions done & ownership
Q11. Define your understanding of project management success	Reaching your targets; your metrics and goals Ensuring people have learnt something
Q12. What are the different types of project risks ?	<ul style="list-style-type: none"> • Time management • Not hitting targets

	<ul style="list-style-type: none"> • Projects fail
Q13. Outline how you would manage project risks	Regular feedback and communication & escalation as required
Q14. Outline how you would manage project change requests	Validated by project manager and team and what is change going to achieve
Q15. Do you see any benefits to implementing a project management methodology	Yes – every project will be running on same line People have better understanding & experience
Q16. Have you attended project management training ?	No
Q17. Duration of training	N/A
Q18. Form of training	N/A
Q19. Training approach	N/A
Q20. Score the effectiveness of this training ...	N/A
Q21. What do you believe to be the positive aspects of the project management training which you attended ?	N/A
Q22. What do you believe to be the negative aspects of the project management training which you attended ?	N/A
Q23. Project management certification ?	None
Q24. How many project shave you worked on since you commenced employment with the test organisation ?	Dozens
Q25. Rate the outcome of these projects	<ul style="list-style-type: none"> • Project 1 – delivered on time – Yes Delivered within budget – Yes Delivered to an acceptable quality standard – Yes • Project 2 On time – Yes Within budget – N/A To quality – Yes • Project 3 On time – No Within budget – N/A To quality – Yes

Q26. Within this organisation, what do you see as being the main problem areas for projects ?	<ul style="list-style-type: none"> • Time management • Communication • Follow-up
Q27. What do you think is required for a project to have a positive outcome ?	<ul style="list-style-type: none"> • Buy-in from everyone • Everyone to understand overall objectives and goals
Q28. How many projects do you currently manage ?	2
Q29. How many projects are you currently involved in as a team member ?	5-6
Q30. How many projects are you currently involved in as a sponsor or business owner ?	1
Q31. What is the proposed timeline and budget for each of these projects ?	Project 1 – Timeline = 3 years Budget = N/A Project 2 – Timeline = 6 months Budget = N/A Project 3 – Timeline = 9 months Budget = N/A
Q32. What is the project management method employed by this organisation ?	None
Q33. Is this method supported and applied across all functions in the organisation (IT & Business) in the management of projects ?	N/A
Q34. How was the method selected by the organisation ?	N/A
Q35. How would you rate compliance by the organisation to the method ?	N/A
Q36. How does the company measure the effectiveness of the project management method ?	N/A
Q37. How would you rate the effectiveness of the method wrt the following ... ?	N/A
Q38. What do you believe to be the positive aspects of this project management method ?	N/A
Q39. What do you believe to be the problem areas of this method?	N/A

Q40. What is the level of management support for formalised project management practice within the organisation ?	Medium
Q41. What is the level of awareness across management (middle & executive; business & IT) regarding the % of project success and failure within the organisation ?	Medium
Q42. What is the level of awareness across management (middle & executive; business & IT) regarding the cost of project failure to the organisation ?	Medium
Q43. Please add any other details that you believe might be of benefit to this project management audit	None

Questionnaire Results – Respondent 16.

Question	Answer
Q1. Nationality	Irish
Q2. Age bracket	25-35
Q3. Job title	Senior Manufacturing Engineer
Q4. Duration in current position	4 years 3 months
Q5. Duration working with test organisation	4 years 3 months
Q6. Duration working in industry	10 years
Q7. Level of education	BEng (Electronic Systems)
Q8. Score your level of project management knowledge	High
Q9. Define your understanding of a project	How you achieve your specific goal or requirement
Q10. Define your understanding of project management	As Q9, with specific resources in order to achieve your goal within a specific time period
Q11. Define your understanding of project management success	Meeting your goals; customer expectations, within time period & projected costs
Q12. What are the different types of project risks ?	Not enough knowledge about project in order to manage it
Q13. Outline how you would manage project risks	Depends on project – build in contingency – depends on level of risk you believe is involved

Q14. Outline how you would manage project change requests	Re-evaluate how the change request affects the project & then make new actions required to achieve this – perhaps delay in time + additional resources
Q15. Do you see any benefits to implementing a project management methodology	Yes – it would be nice if everyone was coming from the same angle – uniformity
Q16. Have you attended project management training?	Yes
Q17. Duration of training	3 days
Q18. Form of training	Off the shelf + Bespoke
Q19. Training approach	Theory + exercises
Q20. Score the effectiveness of this training ...	<ul style="list-style-type: none"> • Improving proj. mgt. knowledge – very effective • Improving your ability to execute your role within a project – very effective • As a consequence of training, project quality was improved for those projects on which you subsequently worked – very effective • As a consequence of training, project communication was improved for those projects on which you subsequently worked – very effective • As a consequence of training, project documentation was improved for those projects on which you subsequently worked – Moderately effective • Training improved your productivity – moderately effective • As a consequence of training, average project outcome was improved for those projects on which you subsequently worked – very effective

Q21. What do you believe to be the positive aspects of the project management training which you attended ?	To understand that if you are a project owner or manager then that has to be your key focus and your key role
Q22. What do you believe to be the negative aspects of the project management training which you attended ?	At one course, the trainer tried to use a tool and there was no s/w package to support it – manual process which was unworkable in reality
Q23. Project management certification ?	None
Q24. How many project shave you worked on since you commenced employment with the test organisation ?	50
Q25. Rate the outcome of these projects	<ul style="list-style-type: none"> • Project 1 – delivered on time – Yes Delivered within budget – Yes Delivered to an acceptable quality standard – Yes • Project 2 On time – No Within budget – Yes To quality – Yes • Project 3 On time – Yes Within budget – No To quality – Yes
Q26. Within this organisation, what do you see as being the main problem areas for projects ?	Some people use OPM; some no tool; some MS Project – diversity of approaches is a problem. People not realistic with resource vs time expectations
Q27. What do you think is required for a project to have a positive outcome ?	Resources vs achievable time People should view overall project scheme and decide if project is feasible
Q28. How many projects do you currently manage ?	1
Q29. How many projects are you currently involves in as a team member ?	5-6
Q30. How many projects are you currently involved in as a sponsor or business owner ?	None
Q31. What is the proposed timeline and budget for each of these projects ?	Project 1 – Timeline = 7 months Budget = N/A

	Project 2 – Timeline = 2 months Budget = €20 k Project 3 - Timeline = 6 months Budget = No real budget
Q32. What is the project management method employed by this organisation ?	MS Project
Q33. Is this method supported and applied across all functions in the organisation (IT & Business) in the management of projects ?	No
Q34. How was the method selected by the organisation ?	Decision based on peoples experience
Q35. How would you rate compliance by the organisation to the method ?	Weak
Q36. How does the company measure the effectiveness of the project management method ?	It doesn't
Q37. How would you rate the effectiveness of the method wrt the following ... ?	<ul style="list-style-type: none"> • Improving the average project outcome – moderately effective • Improving project quality moderately effective • Improving project communication – moderately effective • Improving documentation quality – ineffective -> very effective • Improving the productivity of team and manager – moderately effective
Q38. What do you believe to be the positive aspects of this project management method ?	You can look at a Gantt Chart – you don't have to wade into details
Q39. What do you believe to be the problem areas of this method?	When a project gets to 700 line items it becomes difficult to view all the information
Q40. What is the level of management support for formalised project management practice within the organisation ?	They would like a formal system – moderate

Q41. What is the level of awareness across management (middle & executive; business & IT) regarding the % of project success and failure within the organisation ?	Low
Q42. What is the level of awareness across management (middle & executive; business & IT) regarding the cost of project failure to the organisation ?	Low
Q43. Please add any other details that you believe might be of benefit to this project management audit	None

Questionnaire Results – Respondent 17.

Question	Answer
Q1. Nationality	Irish
Q2. Age bracket	35-45
Q3. Job title	Maintenance Technician
Q4. Duration in current position	4.5 years
Q5. Duration working with test organisation	4.5 years
Q6. Duration working in industry	19 years
Q7. Level of education	Dip. in Mechanical Engineering Currently undertaking degree in Manufacturing
Q8. Score your level of project management knowledge	Moderate
Q9. Define your understanding of a project	Something that needs to be done; assigned a team to do it & you have goals and objectives
Q10. Define your understanding of project management	Managing the whole project
Q11. Define your understanding of project management success	Achieving goals and objectives or making some type of improvement
Q12. What are the different types of project risks ?	Investing a lot of money and getting no return Failure Project starts off and it just fades away (people lose interest)
Q13. Outline how you would manage project risks	Analyse data first and see if you need to do a project or not If you need to do a project, secure team and support from management

	Set realistic goals and objectives and follow-through to completion Analysis of what went wrong and what could be improved for next project
Q14. Outline how you would manage project change requests	Weekly meetings – look to see if there are new requests
Q15. Do you see any benefits to implementing a project management methodology	Yes – methodology would keep projects n the radar
Q16. Have you attended project management training ?	No
Q17. Duration of training	N/A
Q18. Form of training	N/A
Q19. Training approach	N/A
Q20. Score the effectiveness of this training ...	N/A
Q21. What do you believe to be the positive aspects of the project management training which you attended ?	N/A
Q22. What do you believe to be the negative aspects of the project management training which you attended ?	N/A
Q23. Project management certification ?	None
Q24. How many project shave you worked on since you commenced employment with the test organisation ?	15-16
Q25. Rate the outcome of these projects	<ul style="list-style-type: none"> • Project 1 – delivered on time – No Delivered within budget – No budget set Delivered to an acceptable quality standard – Yes • Project 2 On time – No Within budget – N/A To quality – Not acceptable quality • Project 3 On time – No Within budget – N/A To quality – Questionable

Q26. Within this organisation, what do you see as being the main problem areas for projects ?	Not completing projects
Q27. What do you think is required for a project to have a positive outcome ?	Requires a lot of support from senior management Need time to do it Need budget
Q28. How many projects do you currently manage ?	None
Q29. How many projects are you currently involved in as a team member ?	1
Q30. How many projects are you currently involved in as a sponsor or business owner ?	None
Q31. What is the proposed timeline and budget for each of these projects ?	Timeline = Presently no timeline defined Budget = None defined at present
Q32. What is the project management method employed by this organisation ?	I don't know
Q33. Is this method supported and applied across all functions in the organisation (IT & Business) in the management of projects ?	N/A
Q34. How was the method selected by the organisation ?	N/A
Q35. How would you rate compliance by the organisation to the method ?	N/A
Q36. How does the company measure the effectiveness of the project management method ?	N/A
Q37. How would you rate the effectiveness of the method wrt the following ... ?	N/A
Q38. What do you believe to be the positive aspects of this project management method ?	N/A
Q39. What do you believe to be the problem areas of this method ?	N/A
Q40. What is the level of management support for formalised project management practice within the organisation ?	Low

Q41. What is the level of awareness across management (middle & executive; business & IT) regarding the % of project success and failure within the organisation ?	Low
Q42. What is the level of awareness across management (middle & executive; business & IT) regarding the cost of project failure to the organisation ?	Low
Q43. Please add any other details that you believe might be of benefit to this project management audit	None

Questionnaire Results – Respondent 18.

Question	Answer
Q1. Nationality	Irish
Q2. Age bracket	25-35
Q3. Job title	Programmer
Q4. Duration in current position	7 months
Q5. Duration working with test organisation	7 months
Q6. Duration working in industry	2 years
Q7. Level of education	BSc in Computer Systems Dip. in Bus. Administration
Q8. Score your level of project management knowledge	Moderate
Q9. Define your understanding of a project	A set of processes in order to achieve a goal
Q10. Define your understanding of project management	The unit that comes up with those processes - It makes sure the goal is a valid goal
Q11. Define your understanding of project management success	Project management is not very successful as only 5% of projects statistically are successfully
Q12. What are the different types of project risks ?	Financial risks Breach of laws and regulations
Q13. Outline how you would manage project risks	See if project would add value to company – would end product be worth it Ensure that project fits in with current infrastructure

Q14. Outline how you would manage project change requests	Agree on initial spec. and come up with a set of requirements and stick to these rigorously Get it right first time Don't review requirements until Phase II
Q15. Do you see any benefits to implementing a project management methodology	No benefits based on way things are currently done in test company
Q16. Have you attended project management training ?	No
Q17. Duration of training	N/A
Q18. Form of training	N/A
Q19. Training approach	N/A
Q20. Score the effectiveness of this training ...	N/A
Q21. What do you believe to be the positive aspects of the project management training which you attended ?	N/A
Q22. What do you believe to be the negative aspects of the project management training which you attended ?	N/A
Q23. Project management certification ?	None
Q24. How many project shave you worked on since you commenced employment with the test organisation ?	2
Q25. Rate the outcome of these projects	<ul style="list-style-type: none"> • Project 1 – delivered on time – Hasn't really started yet Delivered within budget – Hasn't really started yet Delivered to an acceptable quality standard – Hasn't really started yet • Project 2 On time – No Within budget – Don't know To quality – Yes
Q26. Within this organisation, what do you see as being the main problem areas for projects ?	<ul style="list-style-type: none"> • Level of staffing – not enough staff in IT • No communication • Procedures are changing a lot – they change too often

	<ul style="list-style-type: none"> • Difficult to track down people in other sites (US)
Q27. What do you think is required for a project to have a positive outcome ?	<ul style="list-style-type: none"> • Everyone on the team needs to be well informed • Regular meetings • Clearly defined set of requirements
Q28. How many projects do you currently manage ?	None
Q29. How many projects are you currently involves in as a team member ?	2
Q30. How many projects are you currently involved in as a sponsor or business owner ?	None
Q31. What is the proposed timeline and budget for each of these projects ?	Project 1 – Timeline = None as yet Budget = None that I'm aware of Project 2 – Timeline = 1 month Budget = None that I'm aware of
Q32. What is the project management method employed by this organisation ?	I don't know
Q33. Is this method supported and applied across all functions in the organisation (IT & Business) in the management of projects ?	N/A
Q34. How was the method selected by the organisation ?	N/A
Q35. How would you rate compliance by the organisation to the method ?	N/A
Q36. How does the company measure the effectiveness of the project management method ?	N/A
Q37. How would you rate the effectiveness of the method wrt the following ... ?	N/A
Q38. What do you believe to be the positive aspects of this project management method ?	N/A
Q39. What do you believe to be the problem areas of this method?	N/A
Q40. What is the level of management support for formalised project management practice within the organisation ?	Good but level of implementation is questionable

Q41. What is the level of awareness across management (middle & executive; business & IT) regarding the % of project success and failure within the organisation ?	Don't know
Q42. What is the level of awareness across management (middle & executive; business & IT) regarding the cost of project failure to the organisation ?	They would be pretty aware of this
Q43. Please add any other details that you believe might be of benefit to this project management audit	None

Questionnaire Results – Respondent 19.

Question	Answer
Q1. Nationality	Irish
Q2. Age bracket	25-35
Q3. Job title	Senior Production Planner
Q4. Duration in current position	2.5 years
Q5. Duration working with test organisation	2.5 years
Q6. Duration working in industry	10 years
Q7. Level of education	Post-primary
Q8. Score your level of project management knowledge	Moderate
Q9. Define your understanding of a project	<ul style="list-style-type: none"> • An achievable objective that you can measure and effectively improve • A common goal for everyone to improve it
Q10. Define your understanding of project management	To scope the project; List any constraints that may hamper you from achieving the goals & define timelines to measure data & have corrective actions
Q11. Define your understanding of project management success	Hitting targets that have been set and driving corporate improvements
Q12. What are the different types of project risks ?	Lack of buy-in
Q13. Outline how you would manage project risks	By outlining the risks and meeting owners and assessing how much influence they have to changing risks

Q14. Outline how you would manage project change requests	Wouldn't be welcome to change requests After scope has been agreed, new change requests would be detrimental to outcome
Q15. Do you see any benefits to implementing a project management methodology	Yes – having a set format through which people can manage their projects Sharing information increases awareness
Q16. Have you attended project management training ?	No
Q17. Duration of training	N/A
Q18. Form of training	N/A
Q19. Training approach	N/A
Q20. Score the effectiveness of this training ...	N/A
Q21. What do you believe to be the positive aspects of the project management training which you attended ?	N/A
Q22. What do you believe to be the negative aspects of the project management training which you attended ?	N/A
Q23. Project management certification ?	None
Q24. How many project shave you worked on since you commenced employment with the test organisation ?	3
Q25. Rate the outcome of these projects	<ul style="list-style-type: none"> • Project 1 – delivered on time – No Delivered within budget – No budget Delivered to an acceptable quality standard – None set • Project 2 On time – Yes Within budget – No budget To quality – Yes • Project 3 On time – Yes Within budget – No budget To quality – Yes

Q26. Within this organisation, what do you see as being the main problem areas for projects ?	Getting buy-in from all the parties involved Globally difficult to get buy-in from all departments Timelines & scope are not properly defined (sketchy)
Q27. What do you think is required for a project to have a positive outcome ?	Commitment Buy-in Having the right scope
Q28. How many projects do you currently manage ?	2
Q29. How many projects are you currently involved in as a team member ?	3
Q30. How many projects are you currently involved in as a sponsor or business owner ?	All 3 as business owner
Q31. What is the proposed timeline and budget for each of these projects ?	Project 1 – Timeline = None Budget = None Project 2 – Timeline = None Budget = None Project 3 – Timeline = 3 months Budget = None
Q32. What is the project management method employed by this organisation ?	No method used
Q33. Is this method supported and applied across all functions in the organisation (IT & Business) in the management of projects ?	No
Q34. How was the method selected by the organisation ?	N/A
Q35. How would you rate compliance by the organisation to the method ?	N/A
Q36. How does the company measure the effectiveness of the project management method ?	N/A
Q37. How would you rate the effectiveness of the method wrt the following ... ?	N/A
Q38. What do you believe to be the positive aspects of this project management method ?	N/A
Q39. What do you believe to be the problem areas of this method?	N/A

Q40. What is the level of management support for formalised project management practice within the organisation ?	Medium
Q41. What is the level of awareness across management (middle & executive; business & IT) regarding the % of project success and failure within the organisation ?	Medium
Q42. What is the level of awareness across management (middle & executive; business & IT) regarding the cost of project failure to the organisation ?	Low
Q43. Please add any other details that you believe might be of benefit to this project management audit	None

APPENDIX C – COURSE EVALUATION FEEDBACK FORMS

Course Evaluation Form - Respondent 1

Question	Answer
Q1. Job Title	Supervisor
Q2. Score your level of project management knowledge <u>before</u> taking this course	Low
Q3. Score your level of project management knowledge <u>after</u> taking this course	High
Q4. Define your understanding of project management	How to follow through a project and complete it successfully
Q5. Define your understanding of project management success	A project completed in time and within or under budget
Q6. Outline how you would manage project risk ?	Use Risk Management Plan
Q7. Outline how you would manage project change requests ?	Take the request into account and if its applicable have the requestor fill out a project change request form
Q8. Score the effectiveness of this training with respect to its effect (if any) on the following ?	Training has improved your project management knowledge – Answer = Very effective Training has improved your ability to execute your role within a project Answer = Very effective
Q9. What do you believe to be the positive aspects of this project management training ?	It breaks the project into 3 small steps to make it less confusing and easier to achieve
Q10. What do you believe to be the negative aspects of this project management training ?	None
Q11. Do you believe the format of this training (1 st day theory; second day applying the methodology) is beneficial to accelerating the project management learning process ?	Very beneficial
Q12. How would you rate your overall satisfaction with this course ?	Very satisfied
Q13. How would you rate PM3 (project management methodology used) with respect to ease of use ?	Easy to use
Q14. Do you believe there is any benefit to be had in adopting PM3 as the standard methodology for the management of projects within the test company ?	Very beneficial
Q15. Will PM3 make it easier for you to execute any future project roles you might have ?	Significant improvement in ability to execute project roles
Q16. What do you consider to be the most positive aspects of PM3 ?	Quite easy to understand
Q17. What do you believe to be the most negative aspects of PM3 ?	None

Course Evaluation Form - Respondent 2

Question	Answer
Q1. Job Title	Business Analyst
Q2. Score your level of project management knowledge <u>before</u> taking this course	Moderate
Q3. Score your level of project management knowledge <u>after</u> taking this course	Moderate
Q4. Define your understanding of project management	Apply tools and knowledge required to successfully complete projects
Q5. Define your understanding of project management success	Meet project scope,objectives,deliverables within stated cost,time,quality specifications
Q6. Outline how you would manage project risk ?	Set up risk management procedure to track,log and deal with risks as they are identified
Q7. Outline how you would manage project change requests ?	Establish project change request process which would define how changes will be assessed, voted on, implemented and documented
Q8. Score the effectiveness of this training with respect to its effect (if any) on the following ?	Training has improved your project management knowledge Answer = Moderately effective Training has improved your ability to execute your role within a project Answer = Very effective
Q9. What do you believe to be the positive aspects of this project management training ?	Very practical and applicable to test company projects
Q10. What do you believe to be the negative aspects of this project management training ?	Very short – it would be useful to have a further review session after the case study
Q11. Do you believe the format of this training (1 st day theory; second day applying the methodology) is beneficial to accelerating the project management learning process ?	Moderately beneficial
Q12. How would you rate your overall satisfaction with this course ?	Very satisfied
Q13. How would you rate PM3 (project management methodology used) with respect to ease of use ?	Easy to use
Q14. Do you believe there is any benefit to be had in adopting PM3 as the standard methodology for the management of projects within the test company ?	Very beneficial
Q15. Will PM3 make it easier for you to execute any future project roles you might have ?	Significant improvement in ability to execute project roles
Q16. What do you consider to be the most positive aspects of PM3 ?	Clear steps – easy to follow format
Q17. What do you believe to be the most negative aspects of PM3 ?	Can't think of any

Course Evaluation Form – Respondent 3

Note – This respondent only attended the second day of training during which the course participants applied the project management methodology to a Case Study exercise – he missed the first day of theory and so was not really in a position to conduct a beneficial course evaluation

Question	Answer
Q1. Job Title	Planner
Q2. Score your level of project management knowledge <u>before</u> taking this course	Low
Q3. Score your level of project management knowledge <u>after</u> taking this course	Moderate
Q4. Define your understanding of project management	N/A (didn't attend first day of training so needed to study course notes)
Q5. Define your understanding of project management success	N/A
Q6. Outline how you would manage project risk ?	N/A
Q7. Outline how you would manage project change requests ?	N/A
Q8. Score the effectiveness of this training with respect to its effect (if any) on the following ?	Training has improved your project management knowledge Answer = Moderately effective Training has improved your ability to execute your role within a project Answer = Moderately effective
Q9. What do you believe to be the positive aspects of this project management training ?	It gives a good step-by-step structure to setting up and implementing a project
Q10. What do you believe to be the negative aspects of this project management training ?	There is a lot of work involved especially when you're talking about small projects
Q11. Do you believe the format of this training (1 st day theory; second day applying the methodology) is beneficial to accelerating the project management learning process ?	No answer supplied
Q12. How would you rate your overall satisfaction with this course ?	No answer supplied
Q13. How would you rate PM3 (project management methodology used) with respect to ease of use ?	No answer supplied
Q14. Do you believe there is any benefit to be had in adopting PM3 as the standard methodology for the management of projects within the test company ?	No answer supplied
Q15. Will PM3 make it easier for you to execute any future project roles you might have ?	No answer supplied
Q16. What do you consider to be the most positive aspects of PM3 ?	No answer supplied
Q17. What do you believe to be the most negative aspects of PM3 ?	No answer supplied

Course Evaluation Form – Respondent 4

Question	Answer
Q1. Job Title	Test
Q2. Score your level of project management knowledge <u>before</u> taking this course	Moderate
Q3. Score your level of project management knowledge <u>after</u> taking this course	High
Q4. Define your understanding of project management	A much better understanding of project management – regarding the 3 steps – will be a huge help
Q5. Define your understanding of project management success	A very good learning tool A better insight into project management
Q6. Outline how you would manage project risk ?	Communication Backup
Q7. Outline how you would manage project change requests ?	No answer given
Q8. Score the effectiveness of this training with respect to its effect (if any) on the following ?	Training has improved your project management knowledge Answer = Very effective Training has improved your ability to execute your role within a project Answer = Very effective
Q9. What do you believe to be the positive aspects of this project management training ?	A better understanding / Again the 3 steps Scoping/Planning/Shutdown
Q10. What do you believe to be the negative aspects of this project management training ?	When we were split into groups I found parts of the day turned into debates on different topics that may not be relevant to the project
Q11. Do you believe the format of this training (1 st day theory; second day applying the methodology) is beneficial to accelerating the project management learning process ?	Very beneficial
Q12. How would you rate your overall satisfaction with this course ?	Very satisfied
Q13. How would you rate PM3 (project management methodology used) with respect to ease of use ?	Very easy to use
Q14. Do you believe there is any benefit to be had in adopting PM3 as the standard methodology for the management of projects within the test company ?	Very beneficial but not on all projects but steps I would not use I would put in as N/A
Q15. Will PM3 make it easier for you to execute any future project roles you might have ?	Significant Improvement in ability to execute project roles
Q16. What do you consider to be the most positive aspects of PM3 ?	I found the Scoping part. But on a whole I think you can apply PM3 to almost anything – not just projects
Q17. What do you believe to be the most negative aspects of PM3 ?	Day was a bit heavy. I think the teams should be even on the day – regarding outspoken people and also people with previous training

Course Evaluation Form - Respondent 5

Question	Answer
Q1. Job Title	Test
Q2. Score your level of project management knowledge <u>before</u> taking this course	Low
Q3. Score your level of project management knowledge <u>after</u> taking this course	Moderate
Q4. Define your understanding of project management	Leading a project from start to finish and following the correct procedure in administering it
Q5. Define your understanding of project management success	No answer given
Q6. Outline how you would manage project risk ?	Risk Management Plan
Q7. Outline how you would manage project change requests ?	Project change procedure – inform all stakeholders of the form and to familiarise themselves with this
Q8. Score the effectiveness of this training with respect to its effect (if any) on the following ?	Training has improved your project management knowledge Answer = Moderately effective Training has improved your ability to execute your role within a project Answer = Moderately effective
Q9. What do you believe to be the positive aspects of this project management training ?	It gets you thinking of the correct procedure to follow It structures the project to attain success
Q10. What do you believe to be the negative aspects of this project management training ?	Manual on first day very long On 2 nd day it got a bit confusing at the start – even now I am still not 100% sure as how to approach or take on a project
Q11. Do you believe the format of this training (1 st day theory; second day applying the methodology) is beneficial to accelerating the project management learning process ?	Moderately beneficial
Q12. How would you rate your overall satisfaction with this course ?	Moderately satisfied
Q13. How would you rate PM3 (project management methodology used) with respect to ease of use ?	Not very easy to use -> Easy to use (somewhere in between – still not sure how to use)
Q14. Do you believe there is any benefit to be had in adopting PM3 as the standard methodology for the management of projects within the test company ?	Very beneficial
Q15. Will PM3 make it easier for you to execute any future project roles you might have ?	Moderate improvement in ability to execute project roles
Q16. What do you consider to be the most positive aspects of PM3 ?	The structure of a project – e.g. how you would structure a project that you managed
Q17. What do you believe to be the most negative aspects of PM3 ?	Manual confusing at times 2 nd day breakout got confusing at times

Course Evaluation Form – Respondent 6

Question	Answer
Q1. Job Title	Maintenance Technician
Q2. Score your level of project management knowledge <u>before</u> taking this course	Low
Q3. Score your level of project management knowledge <u>after</u> taking this course	Moderate
Q4. Define your understanding of project management	Set guidelines and outlines to follow so that project meets its objectives
Q5. Define your understanding of project management success	To reach your target goals within time and budget
Q6. Outline how you would manage project risk ?	Using risk logs and risk confinement charts to monitor and minimise risk
Q7. Outline how you would manage project change requests ?	During weekly meeting assess request on whether its possible to implement in your project 1:1 meeting can be used
Q8. Score the effectiveness of this training with respect to its effect (if any) on the following ?	Training has improved your project management knowledge Answer = Moderately effective Training has improved your ability to execute your role within a project Answer = Very effective
Q9. What do you believe to be the positive aspects of this project management training ?	When undertaking my project I have a startup point, a middle and an end. Also way to monitor the progress of the project and ensure its within its spec.
Q10. What do you believe to be the negative aspects of this project management training ?	Hard to visualise time and budget until a real project is undertaken
Q11. Do you believe the format of this training (1 st day theory; second day applying the methodology) is beneficial to accelerating the project management learning process ?	Very beneficial
Q12. How would you rate your overall satisfaction with this course ?	Very satisfied
Q13. How would you rate PM3 (project management methodology used) with respect to ease of use ?	Easy to use
Q14. Do you believe there is any benefit to be had in adopting PM3 as the standard methodology for the management of projects within the test company ?	Very beneficial
Q15. Will PM3 make it easier for you to execute any future project roles you might have ?	Significant improvement in ability to execute project roles
Q16. What do you consider to be the most positive aspects of PM3 ?	How to go about undertaking a project in a controlled manner and keeping your project under control
Q17. What do you believe to be the most negative aspects of PM3 ?	A lot of material to take in at first during tutorial

Course Evaluation Form – Respondent 7

Question	Answer
Q1. Job Title	Maintenance Technician
Q2. Score your level of project management knowledge <u>before</u> taking this course	Low
Q3. Score your level of project management knowledge <u>after</u> taking this course	High
Q4. Define your understanding of project management	The effective management of a project through managing its resources/costs/time using a step by step process – Scope -> Plan ...
Q5. Define your understanding of project management success	Completion of project in allocated time, budget and resource constraints Learning from project success/failures & applying to future projects
Q6. Outline how you would manage project risk ?	Define project risks at scope stage – plan stage Put in place countermeasures to risks Assign a team member to manage the risk Get weekly updates at weekly meeting
Q7. Outline how you would manage project change requests ?	Develop project change document Inform stakeholders and team that this document must be filled out and submitted before a change will be considered
Q8. Score the effectiveness of this training with respect to its effect (if any) on the following ?	Training has improved your project management knowledge Answer = Very effective Training has improved your ability to execute your role within a project Answer = Very effective
Q9. What do you believe to be the positive aspects of this project management training ?	It provided a good step by step sequence to implementing a project -with practice will be useful
Q10. What do you believe to be the negative aspects of this project management training ?	Day 2 should be based on a more suitable project based on test company projects
Q11. Do you believe the format of this training (1 st day theory; second day applying the methodology) is beneficial to accelerating the project management learning process ?	Very beneficial
Q12. How would you rate your overall satisfaction with this course ?	Very satisfied
Q13. How would you rate PM3 (project management methodology used) with respect to ease of use ?	Easy to use
Q14. Do you believe there is any benefit to be had in adopting PM3 as the standard methodology for the management of projects within the test company ?	Very beneficial
Q15. Will PM3 make it easier for you to execute any future project roles you might have ?	Significant improvement in ability to execute project roles
Q16. What do you consider to be the most positive aspects of PM3 ?	The step by step easy to understand guide to PM
Q17. What do you believe to be the most negative aspects of PM3 ?	2 days too short 3 days minimum with in home practicles

Course Evaluation Form - Respondent 8

Question	Answer
Q1. Job Title	Process Technician
Q2. Score your level of project management knowledge <u>before</u> taking this course	Low
Q3. Score your level of project management knowledge <u>after</u> taking this course	Moderate
Q4. Define your understanding of project management	Define project statement-objectives Define resource/risk requirements Develop plan, manage actions, achieve goals Close out project and evaluate
Q5. Define your understanding of project management success	Actions/Objectives achieved within budget
Q6. Outline how you would manage project risk ?	Define risks Outline containment to those risks Assign responsibilities to the risks Calculate risk/impact level Manage containment actions
Q7. Outline how you would manage project change requests ?	Develop change management process and form Ensure all team members and stakeholders understand process Monitor on a weekly basis any changes in project Request reports and file in control book
Q8. Score the effectiveness of this training with respect to its effect (if any) on the following ?	Training has improved your project management knowledge Answer = Very effective Training has improved your ability to execute your role within a project Answer = Very effective
Q9. What do you believe to be the positive aspects of this project management training ?	Simple, straightforward thought process when tackling any type of project
Q10. What do you believe to be the negative aspects of this project management training ?	Seems to be some repetition in the forms/reports Sometimes process refers back to info. that has already been derived
Q11. Do you believe the format of this training (1 st day theory; second day applying the methodology) is beneficial to accelerating the project management learning process ?	Very beneficial
Q12. How would you rate your overall satisfaction with this course ?	Very satisfied
Q13. How would you rate PM3 (project management methodology used) with respect to ease of use ?	Easy to use – will probably get easier over time
Q14. Do you believe there is any benefit to be had in adopting PM3 as the standard methodology for the management of projects within the test company ?	Very beneficial – managers should attend a course as mandatory training skill
Q15. Will PM3 make it easier for you to execute any future project roles you might have ?	Significant improvement in ability to execute project roles
Q16. What do you consider to be the most positive aspects of PM3 ?	Before, didn't have any formal structure/process for managing a project

	Now have a simple enough process to follow
Q17. What do you believe to be the most negative aspects of PM3 ?	Possibly too many forms to fill out

Course Evaluation Form - Respondent 9

Question	Answer
Q1. Job Title	Maintenance Technician
Q2. Score your level of project management knowledge <u>before</u> taking this course	Low
Q3. Score your level of project management knowledge <u>after</u> taking this course	Moderate
Q4. Define your understanding of project management	A structured approach to completing a project by managing it from the very beginning
Q5. Define your understanding of project management success	Completing a project successfully and understanding why it was successful or why it failed
Q6. Outline how you would manage project risk ?	Delegate responsibilities to suitable people who have resources to monitor the risks properly
Q7. Outline how you would manage project change requests ?	Fully documented within the scope of the project with everyone made aware of and in agreement with the proposed changes
Q8. Score the effectiveness of this training with respect to its effect (if any) on the following ?	Training has improved your project management knowledge Answer = Very effective Training has improved your ability to execute your role within a project Answer = Very effective
Q9. What do you believe to be the positive aspects of this project management training ?	It has given the opportunity to add structure to a project so that even if someone leaves the team there is a recognisable progression and a definite point where someone else can resume
Q10. What do you believe to be the negative aspects of this project management training ?	Very paper intensive
Q11. Do you believe the format of this training (1 st day theory; second day applying the methodology) is beneficial to accelerating the project management learning process ?	Very beneficial
Q12. How would you rate your overall satisfaction with this course ?	Very satisfied
Q13. How would you rate PM3 (project management methodology used) with respect to ease of use ?	Easy to use
Q14. Do you believe there is any benefit to be had in adopting PM3 as the standard methodology for the management of projects within the test company ?	Moderately beneficial

Q15. Will PM3 make it easier for you to execute any future project roles you might have ?	Significant improvement in ability to execute project roles
Q16. What do you consider to be the most positive aspects of PM3 ?	Logical approach Should become easier after using for a while Well documented
Q17. What do you believe to be the most negative aspects of PM3 ?	Not everyone will be using this method. Test company is not known for its continued implementation. Very form based and paper based. Given that I have no previous project management experience, I have nothing to compare it to

APPENDIX D – TEST PROCESS COMPLETION QUESTIONNAIRE

Test Process Completion Questionnaire – Respondent 1

* Note – This respondent only attended the second day of training and was playing catch-up for much of the test process

Question	Answer
Q1. Job Title	Production Planner
Q2. Title of test project	Cycle time metric
Q3. Description of test project	To create the metrics; set the targets;analyse why it did not meet targets or why it exceeded the targets
Q4. Duration of test project	Planned duration of project – 3 months but shelved at 2 months due to resource issues
Q5. Definition of success for test project	Success assumed if targets outlined in Q3. were achieved – success definition implicit; not explicit
Q6. Was the test project a success based on the above definition ?	N/A as project not completed
Q7. Job title on test project	Team Lead
Q8. Did you attend the full 2 days of training ?	No – only 2 nd day
Q9. With respect to the test project, rate the effectiveness of test training against the following criteria :	Improving your project management knowledge – Moderately effective Improving your ability to apply the project management methodology immediately – Moderately effective Having an immediate positive impact on the management of the project – Very effective Improving your ability to fulfil your role within the project more effectively – Moderately effective Improving productivity – Moderately effective (with respect to respondent – team did not attend training)
Q10. What is your definition of project management success ?	To start off with right objectives Scope it out properly Clearly defined goals and achieving those
Q11. With respect to the test project, rate the effectiveness of the project management methodology employed against the following criteria :	Increasing the probability of success for the test project – N/A as project not completed Improving product quality – N/A as project not completed Improving team/management communication – Very effective Improving documentation quality – Ineffective – respondent put a lot of effort into creating documentation without much gain Improving productivity – Moderately effective
Q12. With respect to future projects do you think it would be beneficial to utilise the test training approach ?	There is benefit but you need to be given the time to do it properly

Q13. With respect to future projects do you think it would be beneficial to utilise the test methodology ?	Time component is key but respondent will definitely use aspects of the methodology moving forward
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Test Process Completion Questionnaire – Respondent 2

Question	Answer
Q1. Job Title	Virtual Direct Analyst
Q2. Title of test project	EDI Automation
Q3. Description of test project	Clarify processes surrounding pricing to ensure process is accurate
Q4. Duration of test project	Not possible to predict as project has been restarted for the second time and there is disagreement among functions with regard to which group should manage the project
Q5. Definition of success for test project	With respect to test project – no upfront definition of success
Q6. Was the test project a success based on the above definition ?	N/A as project not yet completed
Q7. Job title on test project	Project Manager
Q8. Did you attend the full 2 days of training ?	Yes
Q9. With respect to the test project, rate the effectiveness of test training against the following criteria :	Improving your project management knowledge – Very effective Improving your ability to apply the project management methodology immediately – Very effective Having an immediate positive impact on the management of the project – Very effective Improving your ability to fulfil your role within the project more effectively – Very effective Improving productivity – Very effective
Q10. What is your definition of project management success ?	Completing a project on time; achieving what you initially set out to do in scope with agreement from major stakeholders
Q11. With respect to the test project, rate the effectiveness of the project management methodology employed against the following criteria :	Increasing the probability of success for the test project – Very effective Improving product quality – Moderately effective Improving team/management communication – Very effective Improving documentation quality – Very effective Improving productivity – Very effective
Q12. With respect to future projects do you think it would be beneficial to utilise the test training approach ?	Very measurable benefit
Q13. With respect to future projects do you think it would be beneficial to utilise the test methodology ?	Yes – definitely beneficial – future projects will be using documentation for people who have never done project management as it is very easy to use

Test Process Completion Questionnaire – Respondent 3

Question	Answer
Q1. Job Title	Maintenance Technician
Q2. Title of test project	Seiko Handler Improvement
Q3. Description of test project	To improve throughput time of product
Q4. Duration of test project	9 months
Q5. Definition of success for test project	No definition of success at the start of the project – data analysed and definition of success decided mid-way – “Success was reaching target of 8.8% downtime”
Q6. Was the test project a success based on the above definition ?	Yes
Q7. Job title on test project	Project Leader
Q8. Did you attend the full 2 days of training ?	Yes
Q9. With respect to the test project, rate the effectiveness of test training against the following criteria :	Improving your project management knowledge – Very effective Improving your ability to apply the project management methodology immediately – Very effective Having an immediate positive impact on the management of the project – Very effective Improving your ability to fulfil your role within the project more effectively – Very effective Improving productivity – Moderately effective
Q10. What is your definition of project management success ?	No answer
Q11. With respect to the test project, rate the effectiveness of the project management methodology employed against the following criteria :	Increasing the probability of success for the test project – Very effective Improving product quality – Very effective Improving team/management communication – Don't know Improving documentation quality – Moderately effective Improving productivity – Moderately effective
Q12. With respect to future projects do you think it would be beneficial to utilise the test training approach ?	“I think there would be a benefit”
Q13. With respect to future projects do you think it would be beneficial to utilise the test methodology ?	Yes