4 DESIGNING THE PROJECT

Design. The general layout or arrangement of a product.

Concise Oxford Dictionary, 8th edition (1991)

In the previous chapter we discussed setting objectives for a project. In parallel we set up the project to respond to the business needs and goals.

We use the term project design to identify this work. Project design includes:

defining the project scope and describing the key deliverables;

assessing the challenges of the project;

choosing the project manager and senior members of the team;

assessing the working environment;

project discipline;

communication;

planning to deal with failure (risk planning).

A notable omission from this list is preparation of the project management plan. There are two reasons for this omission: first, this is of sufficient importance to warrant a separate chapter; second, planning is not restricted to the set-up of a project – it continues throughout the life of the project. We describe planning for the whole life of a project in Chapter 6.

So is ‘design’ just a fancy word for the obvious project preparation? Yes and no. ‘Yes’ because ‘designing a project’ consists of tasks that an experienced project manager would expect to do as a matter of course. However, the tasks are often carried out haphazardly and sometimes not at all. In some cases, the project manager is considered not to be relevant to this work and is presented with a fait accompli, preparation that is often incomplete and ill-thought out.

The project owner and, where appropriate, senior management, must do their best to avoid this outcome. The best remedy by far is to appoint the project manager – now. That will bring the appropriate experience to bear at the right time. If the decision is to carry on regardless, you must now consider carefully how the project should be set up in response to the objectives and the business context. Table 4.1 gives some examples of questions that should be asked.

Table 4.1 Examples of project set-up questions

1

SCOPE AND DELIVERABLES

Scope is important because it helps the project team deliver a result that resembles what the customer wants, to a fair degree.

Yet it is not possible to achieve a perfect match. Primarily, people are simply unable to specify exactly and precisely what they want. This is not just due to the limitations of language. It is also because people change what they want as they understand what they have been given: ‘The user shapes the tool, the tool shapes the user.’ This constant interaction means that you can never respond precisely to the need.

Successful projects have a clear, well-communicated understanding of the project’s direction and a common view of what it will mean to be ‘finished’ – and that does not mean merely completing the agreed deliverables. A clear and agreed definition of scope, flexible but under control, is essential to this understanding. If change is controlled properly the result should match pretty closely what the customer wants.

It is thus vital to specify scope as well as possible and manage changes as well as you can. This will help you avoid the errors described below.

Making choices and decisions that are not yours to make. Once you stray outside the scope of a project, you could be in territory that has nothing to do with your responsibilities. Decisions you make could affect systems or processes that someone else normally takes care of. You then bring about situations where confusion is the least of the business worries. If the scope is not clearly defined, then you have no way of knowing whether you have ‘strayed’.

In an earlier example of an air traffic control system, the project overran significantly because of uncontrolled changes made to the host systems. These changes were made by another manager who was responsible only for ‘maintenance’ of the host systems. However, ‘maintenance’ was not properly defined. This allowed him a much wider interpretation of its scope than was intended. His actions contributed to the project overrun. Worse, since that project was essential to the future strategy, his action compromised that strategy.

Do not exceed scope. If you are unsure of the limits, find out.

Going completely off track either because you aimed in the wrong direction to start with, or because you got lost along the way. In a programme run some years ago, the team raised many issues; the business did not resolve all of the important issues raised.

The team then made what turned out to be a disastrous decision, namely to proceed on the assumption that the issues would be resolved. Not only that, the team assumed issues would be resolved within the current scope of work.

Eventually the business addressed the issues and decided to resolve them in a different way. There was then a dispute over who was to pay for the time and effort wasted. This finally went to court. Despite an out-of-court settlement, the programme was irreparably damaged.

Was a failure to communicate at the root of this? To that question the answer is ‘no’ – the team used the issue management process as agreed and prompted the customer’s management but (for reasons that were never clear) the issues were not resolved.

In this case the correct action would have been to stop work until the issue was resolved. Having established the scope, do not deviate from it unless you have good reason and agreement to proceed.

Being sidetracked from important matters by clever solutions or by new implications of technology. The following example illustrate the risks of starting from technology rather than need.

THE C-NOMIS PROJECT

In a National Audit Office (NAO) report on the C-NOMIS (National Offender Management Information Systems) project2, one that was two years behind schedule and estimated to be about £400 million over budget, many points of failure were picked up. Amongst those points the report notes that, despite initial requirements analysis, the chosen software package ‘appeared to provide a reasonable fit with prison requirements but met, in full, only 29 per cent of probation service requirements. In fact neither assessment was correct and business requirements also changed as policy developed. As a result, the estimated cost of developing the application rose from £99 million, when the full business case was approved in June 2005, to £254 million by July 2007, primarily because of customisation.’

If new possibilities arise from use of technology, raise these with the business before you adopt them in the project.

Failing to do work that is needed because the definition of work to be done is unclear. Jeff took on the role of requirements manager for a more than £1 billion contract. Having gone through the contract line by line, he found about 40 paragraphs where a requirement was unclear. In some cases it was possible to interpret them in more than one way; in others, there was a conflict between one requirement and another.

The contract had already been signed by the time Jeff was able to carry out this analysis. So agreement about the meanings depended on goodwill all round. It is better to resolve such matters before signing a contract.3

Always find out what the scope is; if you find unclear definitions, immediately mark each as a risk and resolve them with the business as soon as possible. In a footnote of Chapter 2 we noted that baseline documents (such as a project charter, initiation document or definition) should be created. Even if such baseline documents do not exist at this point, you should find a work order or statement of work, formal or informal, that can be used to interrogate the scope.4

If scope is well defined and continues to be well managed throughout the life of the project, the resulting systems should be consistent with what the customer needs. If they are not consistent it will be for reasons the customer already understands and has agreed to. Whatever the outcome, one constant refrain should be ‘there were no surprises’.

How to define scope

The starting point for defining scope is the project objectives, together with an analysis of the benefits (as described in Chapter 2). Search these for statements about what benefits are expected from the project when complete.

Ask some questions about each category listed in Table 4.2 – Which? What? Where? and How? The answers help determine which parts of the customer’s organisation are within the boundaries – typically those of the business process or location – and which are outside. You should seek quantitative answers as well as qualitative ones.

Table 4.2 Questions for scope analysis

Scope must be related to the business organisation. For example, if the project is dealing with operations for a warehouse, consider how each category impacts on operations. This can be difficult if a process cuts across organisational boundaries; in this case, note the extent of changes in other business functions and the likely difficulties when dealing with the interfaces. Use these notes to identify project risks.

Scope must be measureable; always seek counts – numbers of workstations, numbers of applications, numbers (and locations) of workplaces and so on.

Scope must be agreed with the customer.

Scope drives out assumptions. We have already noted that. If scope is unclear, this must be raised with the business. What if it cannot be resolved even then? In that case, make an assumption. Agree it with the business, write it down (with your reasons for making it), set out the risk that the assumption is incorrect and add it to those already recorded (see Chapter 2).

The major deliverables

The project’s major deliverables are bound to the scope of work. They will be set out in detail when planning the work, but you should attempt a preliminary summary of the deliverables at the same time as determining the scope. Use Table 4.2 for guidance. Remember that some deliverables may be adjuncts to others – for example if the project is delivering a new logistics system, then the system must be accompanied by guidance for use such as a user manual or a website; an operations manual or website; and a policy document. All of these can be major deliverables. You need this list for planning or when discussing scope changes.

Assessing challenges

Projects are often characterised by the size of the budget when deciding how hard they are to manage successfully. Project managers tend to graduate to projects with bigger and bigger budgets and the size of the project budget is sometimes seen as a ‘badge of honour’. Chris recalls working with one organisation that, quite suddenly, started using much bigger teams to carry out its projects. This meant projects were delivered more quickly, but also much more expensively (for the reasons discussed in Chapter 3).

It turned out that a new senior manager was perceived to value project managers according to the number of people they had working for them. Overnight, an empire-building culture had been unwittingly introduced, to the detriment of the organisation.

We are uncomfortable with the somewhat simplistic view that a project with a big budget is always more difficult than one with a small budget, so we will take a fresh look at what makes a project difficult to manage.

SIZE DOESN’T ALWAYS MATTER

The project involved coordinating the work of 35 subcontractors to convert an airport from military to civilian use. The project team was small (10 people) and the budget correspondingly so, but the potential for reputational damage – for the customer, the subcontractors and the project team – was extensive, far greater than in projects 10 or 100 times the size. Clearly, size is not the only determinant of difficulty.

What is your organisation like?

The Project Management Body of Knowledge (PMBOK) (PMI 2013) discusses the difference between project-oriented and non-project-oriented organisations. Project-oriented organisations either derive revenue primarily from performing projects for others, or have adopted management by projects and so have management systems that support project management. As an example, their financial systems are designed to account for and track income and expenditure on multiple simultaneous projects.

Non-project-oriented organisations, in contrast, rarely have management systems to support a project’s needs efficiently. Typically, they prioritise line authority over project authority, something that will impede the effective delivery of projects. The absence of project-oriented systems often makes project management more difficult; so much so that, in some cases, these organisations set up sub-organisations that are project-oriented in order to complete projects successfully.

Here is an extract from a description of a project manager from a company5 that, at the point of writing, had a line management organisation:

Aspects of the project manager’s job can be more difficult than that of a line manager of comparable seniority. This is true of the work performed and the way in which it is performed. Circumstances unique to the project management task include:

extensive involvement with areas of the organisation that are outside usual reporting lines;

involvement with change that provokes fear and resentment in others;

no prior work experience with others in the team.

For a project manager, if this situation is combined with poor preparation, it risks disaster. This places an onus on the project owner to help the project manager tackle difficult responses from other parts of the organisation.

From experience, there is often a clash between the needs of a project and the line organisation, mostly about availability of resources and the setting or resetting of budgets. Both have justifiable concerns in these matters, but they also have disjointed objectives. The project need for resources is inherently unpredictable and urgent, no matter how good the planning, whereas a line organisation needs stability to do its job properly over time. This applies equally to budgeting: even the best-laid plans will not ensure that the budget will be spent exactly as expected. In a project-oriented organisation this is known and is not a source of surprise. In a line organisation it is disruptive. We have not found a consistent way of resolving this clash – the most we suggest is for the project manager to try and bridge the difference in needs by developing a close relationship with the line managers who ‘own’ and use the resources concerned.

Impossible projects

How should you react if you come across a ‘death march’ project?6 To paraphrase Yourdon, a death march project is one where one or more of these constraints are in place:

The schedule is compressed to less than half the time estimated by a rational process.

The team size is less than half that normally expected for a project of similar size and scope.

The budget and associated resources are half that originally expected for the size and scope.

The technical challenge – features, functionality, performance and so on – is twice what would normally be demanded (for example doubling the transaction volumes without resizing the available processing power).

These projects often arise through combinations of murky politics, naivety and hubris. Sometimes they result from the pressures of competition or unexpected legislation or from unforeseen crises that have to be met urgently. They also come up in start-up situations, where little or no time is available for quiet contemplation. Whilst it is not wrong to attempt such a project, as politics often have a hand in it, senior management should set expectations appropriately.

As a project manager or project owner, you must understand what success means in this case. Meeting the requirements may be well down the list of priorities. Indeed, if the politics are sufficiently opaque, the mark of success might even be the extent to which the project fails.

Our advice to senior managers in any organisation is to be as clear as possible (politics understood) about what will make this project memorable as a positive contribution to the organisation, even though it will be memorable to the project team for rather different reasons.

CHOOSING THE PROJECT MANAGER AND SENIOR STAFF

Selecting senior project personnel is a critical decision for the project owner and, depending on the project, for senior customer (and supplier) management. We have already remarked that the project manager should be appointed before designing the project. You should appoint the project manager as soon as you have a reasonable understanding of the work. This, in our view, is the latest point in the life of the project at which a project manager should be selected.

Being the right person for the job is not just a matter of experience but also one of ‘fit’. If the project manager is short of the right kind of experience they can get into deep trouble. Equally, if the project manager is over-qualified for the job they can fail because, seeing it as unchallenging, they do not bring the level of concentration the work deserves. In an ideal situation:

the project is a challenge and therefore an opportunity to develop;

the challenge is not overwhelming;

the team and senior managers will support the project manager.

The senior staff to be considered will depend on the project. Typically you will appoint a technical lead (for example, a systems architect). In larger projects (those lasting more than a year and with a team of more than 30 people), you may appoint someone to head up a project office or appoint a deputy project manager. If you appoint a deputy this will probably be someone who will take on other responsibilities, for example user relationships (business analysis) or operations (technical analysis).

Development opportunities

When dealing with projects of strategic significance with many relationships to manage, experience matters. It matters because of perceptions of competence and confidence. However, the project is also a development step, with the project manager acquiring new skills and techniques. They will lack that level of competence at the start so the accompanying risk needs to be mitigated by, for example, arranging special mentoring, senior management support or appointing someone with those skills to the project team. In all cases the role of those appointed in helping develop the project manager’s competence must be clear.

The correct perspective for development is set out in a competence framework (Parkes 2011, pp 37–49). This is, we believe, an essential consideration when looking at project management development. Progression to more senior levels should not be based just on experience gained, but should also depend on the building of competence. The result is a more competent project management organisation that lowers its risk of failure through project management error.

Characterising the project

Whilst taking the medium- to long-term gains of personal development for the organisation into account, we still have the immediate need to find a candidate. When Jeff was working on a project manager development process, the question of how best to match projects and project managers arose when setting ‘gates’ for project managers to pass. The solution aimed to reduce risk but also showed how project manager competence could be built.

Consider factors to describe a project’s difficulty: the project dimensions. These are classified by information that is available early on, so that you can get a head start in choosing a suitable manager. They are used to assess project managers and projects, to find a candidate that has most of the relevant experience. Having less to learn, they can spend more time planning and managing the work. Gaps in experience are covered by training and mentoring.

There are 12 factors: three each to describe ‘size’, ‘difficulty’ and ‘political profile’ and a final three for ‘project context’.7

Size

The factors are budget, team numbers and strategic significance. These factors determine whether a project is small, medium or large:

Budget includes labour costs, costs of equipment purchased for the customer or used by the project team, costs of accommodation (recoverable or not) and any other direct costs.

Team numbers include your team, subcontractors or customer staff at peak resource loading.

Strategic significance measures the value of the relationship with your customer and its implications for the future. Even a small project may be critical to the business so this factor may dominate the others.

Difficulty

The factors are business risk, delivery risk and task complexity. The first two are described as percentages of the budget at risk, the third is based on familiarity with the work or technology or on the innovation involved:

Business risk is simple to define if the work is governed by a contract – it is the percentage of contract value at risk because of contract conditions (examples are penalty clauses, liquidated damages, consequential damages or award/incentive fees withheld). Otherwise, the risk is calculated by reference to any assurances given about performance, or to unforeseen changes that cause delay or cost increases.

Delivery risk relates to the level of innovation in technology, to new methods or tools used, to project accommodation or location, and so on. These should be in the risk register so that the cumulative risk can be estimated.

Task complexity is judged by the scale of problems to be solved. A particularly tricky task is to use data warehousing to link an unknown set of legacy systems through a consistent user interface, meeting improved performance needs, and sufficiently modular to phase out any legacy system without adverse effect on functionality or performance. This is (technically) not easy to do.

Political profile

The factors are level of exposure, looseness of control and relationships. They indicate how much executives and investors know (and care) about success and how much (or little) control the project manager has:

Level of exposure depends on which managers the project manager deals with regularly (occasional presentations don’t count). The more senior the manager, the more the project manager is expected to understand not just the state of their project, but also the implications for the customer’s business and environment.

Looseness of control is about the project manager’s dependency on people outside the team (not under their direct control), excluding subcontractors. These are, for example, people who supply equipment, another contractor (or project), and the executive board of the business.

Relationships relates to the numbers of groups, within and outwith the project, that the project manager deals with.

Project context

The factors are: reporting, nature of the task and methods knowledge.

Reporting is the level at which the project manager reports in the organisation; this affects the nature and depth of the reports.

Nature of the task is the contract type or, in an internal project, the way in which budgets are set or changed. The contract may be fixed-price, time-and-materials, risk-reward, cost-plus (incentive/award) and so on. If there is no contract it relates to how and where the project manager can lose control of the budget and how money is made, or lost.

Methods knowledge is the depth of understanding (rather than knowledge) of the methods to be used – which might be waterfall, accelerated, or something else. A manager with prior experience is more aware of the pitfalls.

Matching the project manager to the project

The more challenging the project, the more senior should be the person selected to manage it. Use the factors above to compare challenges and experience so you can make an apt match.

Some quantitative assessment is required to provide a consistent, objective and credible basis of selection. Do not, though, apply the criteria without exception. There is space to judge, for example, that a junior manager has the potential to take on a more challenging task than their training and experience indicates. The project owner, working with senior management, makes this judgement. The greater the gap between experience and challenge the greater the risk. The greater the risk, the greater the need for experienced support or training.

This judgement is the basis for assessing performance. The project manager’s success is considered against what should be expected (from the training and experience) and on what was expected (on the basis of the judgement).

Here is a summary of the steps to follow:

Define each candidate’s experience and competence. Draw a profile of each candidate against the project characteristics. Consider the profiles of projects they have managed and the training they have received. If you have a project manager development process the information should be to hand. If not, make a judgement with the information you have about the projects they have managed.

Note the ‘challenge’ and ‘overkill’ for each candidate. Compare the project and candidate profiles. You will see where each candidate’s competence and experience falls short and where they exceed it. The first is ‘challenge’ the second is ‘overkill’. These are the areas of risk.

Find risk mitigation actions for each candidate. If the chosen candidate lacks experience in a critical aspect of the project, the owner must mitigate the risk, arranging for expertise and experienced support in that aspect of work.

You need to be subtle to mitigate risk associated with over-qualification. You need to avoid a candidate’s possible resentment at being reminded to pay special attention. One way to do this is to shift blame to bureaucracy, making a major issue of following current practice and reporting on the project’s performance in detail for that area of concern.

Evaluate the candidates. Consider areas of overkill and challenge, the practicalities of risk mitigation that will follow a candidate’s appointment and the benefits of developing competences in the candidate for these factors.

Choose a candidate and put risk mitigation into action. Use the evaluation and your best judgement, take advice from trusted sources, talk to the candidates one last time, then brief the chosen project manager.

An example of profiling and matching

We start with a table of values for each factor – ‘reasonable’ but not taken from real projects. Your organisation would set appropriate values for your business.

Table 4.3 Factors for discriminating between projects

Figure 4.1 Profile of a project based on the chosen factors

We now create a profile for the project. It is important – strategic significance is high and exposure is at main board level (or equivalent) even though the budget is moderate in size. It is a project where, though the impact of technical and budget risk is not high there is opportunity for the project manager to misstep.

Two candidates are available to manage the project. Consider their experience against the profile.

Project manager A

The first candidate has run projects with larger budgets and more staff than the one to be undertaken. She has also managed successful projects with much more technical risk. You can be confident that she would understand how to deal with the kinds of situations that can arise when the risks are high and how to manage a team of the size expected. However, there is a (minor) concern that she might see the project as less challenging and ‘take her eye off the ball’.

The main area of concern lies in task complexity and the political factors. Previously she reported to a project owner and had little need to worry about building relationships with many others. However, this is a development opportunity. Provided a senior manager keeps a watchful eye on the relationships and gives her support when she needs it, the risk of her being project manager seems manageable.

Figure 4.2 Profile of candidate A vs project profile

Project manager B

Let us now consider the second candidate, whose profile is in Figure 4.3. This candidate has almost the mirror image of challenge and possible lack of attention. He has not before managed a project with the budget, staff numbers, significance and risk of the one to be undertaken. He will not be familiar with managing a good-size team working on a (possibly) difficult technical task; also he is not familiar with the technology to be used in the project.

On the other hand, he has experience of complexity and political exposure. In the past he managed consultancy projects that did not involve unusual technology, but required him to work closely with very senior managers.

If he is appointed he will need a strong deputy, for example a systems architect with relevant experience who has worked on large projects before.

The project owner will need to help develop a strong relationship between them and back-up the project manager in his dealings with the customer and other groups involved with the project.

Figure 4.3 Profile of candidate B vs project profile

This example shows, by comparing profiles of the project and candidate project managers, that you can determine the challenges and how they might be met – appointing experienced team members and taking action to support candidates in areas where they may be weak. In contrast, appointing project managers only by reference to the size of the project budget or project team is naive.

ASSESSING THE WORKING ENVIRONMENT

A poor working environment, involving noise, restricted working space or interruptions (for example if a working space is also an access route), can obstruct staff trying to work. Time lost to such things can never be recovered.

We are probably poor sources of information about good workplace conditions, having worked in ‘scratch’ conditions for most of our careers. We did pick up some lessons along the way, though.

One of the most important is to have a workplace that encourages communication. In an ‘impossible’ eight-week project (discussed in more detail later) tough workplace conditions had a tremendously positive effect on team spirit and communication; a sort of ‘Dunkirk’ spirit. We do not recommend you plan for such extremes, but do avoid putting the team into cubicles and offices, making it difficult for them to talk to each other. Show no respect for closed office doors unless you know that the person inside would have closed the door only for a serious conversation.8 Get rid of cubicles if you can; replace them with rooms available to anyone for private conversation. Do not have a booking system for the rooms; that just introduces an idle step that takes time and helps no one.9

On one occasion a colleague, an excellent project manager, was taking over a challenging project. He found a working environment with a large central area surrounded by offices where team leaders and manager hid, leaving the team in the middle with little chance of viewing the outside world. On day one he moved out of his office and placed his desk in the middle of the open-plan area. In succeeding days he moved the team leaders out of their offices, which were then used instead as communal meeting rooms and quiet areas. The move did not make the work any easier, but it allowed my colleague to make a first statement of intent: ‘I am the project manager and that means I am in the middle of this.’ And then a second: ‘We do this together and you guys all matter equally, so you all get to use the space equally.’ Taken together, these changed the project dynamics.

PROJECT DISCIPLINE

In efforts to reduce the failure rate of IT projects, experienced people devote much effort and time to finding consistent ways of working for projects. The underlying goal is to reduce variability. By analysing the causes of project failure and finding out why some projects succeed, standards bodies have devised policies, with model processes, that can be tailored by an organisation for their own projects. Some have devised procedures, standards and models for the organisation itself.

These are valuable contributions to project success. They should be respected and used properly by any organisation that wants to improve its chances of running successful projects. For organisations that contract to others, standards such as ISO (International Standards Organisation) 9001 (2008) and CMMI (Capability Maturity Model) (2012) are so important for market positioning that their adoption is close to being essential for their business.

There is, though, a problem. Too often standards are used with little thought about their intent or their effect. Organisations pay lip service to them but are still driven by saving time and money, especially if doing the work properly will involve spending more. It is no coincidence that, reputedly, the most popular method in the UK Civil Service is called PINO (Prince In Name Only). This is not the only organisation of which that could be said: other public and private sector organisations are equally capable of shallow thinking about standards.

If you are serious about reducing the variability of project performance to reduce the risk of failure then you had better be serious about these standards. They should be as important to you as any financial calculation. A failure to use standards properly is a failure to make provision against trouble. Money spent on proper practice should be viewed as an insurance payment against disaster.

Do not, though, adopt the standards as they are set out. Standards are of no use as abstract ideas: they are the means to an end; they take on life and add value only when they are used in pursuit of the project’s objectives. The starting point is the question, ‘What is most important: the schedule, the budget or the delivery scope?’ These cannot be equally important otherwise the work would not be just difficult, it would be impossible.

Refer back to the reason for doing the project and the objectives it is to meet. They will tell you whether, for example, security is important; or how work performance standards condition reviews and inspections. Knowing the context will enable you to determine which project disciplines are important.

Irrespective of the project, think about the way you want your organisation to work and see how the standards will operate in your business. Write it out – briefly – and then ask for intelligent application that both respects the principles of the standard and is consistent with that way of working. It should always be ‘brain led, not brain dead’. This requires effort, but it is time well spent.

The right place to record decisions about standards and the reasons for the choices made is the project’s quality plan. This should state the objectives of the project’s quality system (scope, standards, procedures, organisation and measurement), which should be congruent with the project objectives. The quality plan states how quality is managed in the project and is the point of reference for anyone who wants to know what standards are being used.

It is poor practice to include the standards themselves in the quality plan. Doing that would mean that even a minor change to a standard would require a change to the quality plan, often requiring senior management attention that would be inappropriate to such a change. The quality plan should state why standards are used and what they must achieve without getting bogged down in details.

Project discipline in ‘death march’ projects

When it comes to ‘death march’ projects, the need for project discipline does not diminish. However, neither does the need for common sense. Remember: if you have just a couple of minutes to abandon ship you will not be going through the full ‘lifeboat launch accountability procedure’ before you get off. However, you will hope that the lifeboat ‘suitability for use check procedure’ and the ‘lifeboat launch procedure’ were both carried out properly and regularly beforehand.

Consider this quote:

… I worry even more when I see teams embarking on a death march project with the decision … that they must embrace a formal process approach such as the SEI-CMM or ISO 9000. Formal processes are great if you know what you’re doing, and if you’ve used the processes before. But, the reality is that such formal processes typically haven’t been used at all in the organisation: the death march project is the pilot project for structured analysis or ISO 9000.

… It really is the straw that breaks the camel’s back; after all, the typical death march project is trying to do something that’s never been done before, and … the team often consists of people who have never worked together before. As if that wasn’t enough, now they have to learn how to use an unfamiliar methodology or process, one which they’re not sure they believe in the first place, and one which they’re convinced will slow them down. (Yourdon 2003)

This quote is as much a comment on the organisation as it is on the way the project is set up. If the senior management team decides on (or is forced into) a difficult or impossible project, and then they impose the extra burden of having to follow unfamiliar processes: well, that senior management team deserves to fail and will almost certainly do so. If you are going to use CMMI or ISO 9000 (2005) the organisation must be committed to it as a whole. If a ‘difficult’ project is to use CMMI or ISO 9000 the team must appreciate the necessity and value of the process and they must be sufficiently familiar with it to have confidence in it. It is not necessary for them all to have extensive training as long as some of them do. They all need to know enough about the procedures to ensure the procedures are not a distraction.

The ‘eight-week’ project

In this project, the task was to create, from requirements analysis through to live demonstration and acceptance, a web front-end for an established system, one that could be accessed by fax, telephone or from the website. The project had to be completed and closed in an orderly manner. The total time available from the completion of project set-up to formal closure was eight weeks. In addition to the need for requirements analysis, the project had to be carried out strictly in accord with PRINCE2 and the final audit of project records, post-close, would be one of the key success criteria.

This was a death march project. It required the commitment of time from the team well beyond what was normally expected. It required the team to be familiar with sophisticated tools allowing no more than a day’s training before using them. It required tight discipline, with the team all observing the agreed procedures; those procedures had to be stripped down to their essentials, taking advantage of the team all being sited together, with little time to mess about. Jeff was responsible for ensuring that, in the mêlée, the formal procedures were all strictly observed and that the broader two-year plan was not compromised.

These are the main lessons learned from this project:

Discipline. Always have the preparation done before starting the project and ensure processes are simple and robust. Communicate them to the team before starting work and make sure processes are followed – in particular ensure that issues are resolved quickly. Preparation gives team members the background they need to get on with the work quickly, without surprises.

The importance of requirements. Always start with a firm scope and explore the requirements to reach a stable state early on. Make sure the analysis team has enough people to do the job, and that the customer has the time and people available to explain the business operation.

Gathering requirements. It is essential to involve technical staff in requirements gathering to check whether a business requirement can be met. Start this early in the project. Requirements gathering should be completed early on; in the actual project, requirements were not tied down until the fifth week. This was too much of a delay and meant the project manager had to take risks by working on design and requirements gathering in parallel.

Working together. It is imperative to establish close working relationships with people who understand the business problem right away, whether they are users, customers or other stakeholders. Short (30 minute maximum) daily meetings of the whole team must be held to keep everyone in touch with progress and to be a backstop for discovering and resolving issues. Fast delivery projects must be able to get people, specific or temporary, quickly; they should have a short familiarisation session (and background information) ready to help with the task.

Teams must be small enough to remove the need for layers of management within the project. Team members must act to achieve the result above all, and not worry about status in any shape or form. This applies equally to occasional visitors to the team.

Facilities. In this project, working conditions were cramped, with team members often having to share three to a desk. Plugging and unplugging new equipment – even laptops – was a major operation.

However this actually contributed to improved performance. Close proximity made it easier to build the momentum the team needed to meet delivery dates.

There is a need to have space away from the crowd for people to meet to discuss long-term plans and difficult issues (of, for example, design). In this project, during development and testing a room was rented at the team hotel, where such matters could be discussed quietly.

COMMUNICATIONS

Proactive communication is a key to success. Communicating what the project is about and how it is progressing helps people understand what is going on and helps to align the organisation and the work being done. Communication is not about providing a regular project magazine or notice board or email broadcast. They might come into play at a later stage, but the most important thing at this time is to decide who needs information, what information they need and how often they need it. Remember that the project team counts as an audience here – communication is designed to be two-way, not one-way, and there is little that is more frustrating than to regularly receive ‘rah-rah’ broadcasts from a group that seemingly never appears to notice your own advice or comment. So, in designing for success:

Identify the contact points that will be used to identify and resolve risks, problems, changes and issues. You will need to identify levels of face-off between the team, the users and senior business managers; and you will need commitment in principle that they will participate. For example: technical matters by a relationship between the project’s systems architect (or equivalent) and a senior technical manager in the business’s IT team; budget or schedule by a relationship between the project owner, project manager and senior business managers.

Design the formal communications needed to provide information from the project team. Ensure these are consistent with the way the business operates (for example, respecting their reporting standards) and that reports are easy to grasp and absorb.

Decide whether it is practicable and cost-effective to use a project ‘war room’, available to all, that shows the state of the work in clear pictures and words. If there is any doubt about whether this would fit with the way the business operates then do not proceed. Any failure – displaying out of date information for example – will damage the project’s reputation.

Think about informal communications, but do not try to control them. Instead, try to pre-empt the risk that they will become a channel for rumour by clear, timely and formal messages through the designated channels.

You should record the results of this design; call it a communications strategy if you like but whatever you call it, use it to help shape the communications plan and the future actions the team takes.

STANDARDS AND THEIR EFFECT ON BUSINESS CONSENT

As well as thinking about standards you are constrained to use, consider other standards that support business consent and thus project success. Here are three examples:

Reviews are an essential part of project work. Work out ways of using them to help you build consent and to engage stakeholders in the project.

You need to separate the formal purpose of reviews, namely to confirm that a deliverable has been accepted or that a project phase has ended, from their use in building confidence. To achieve both ends, you need to set out reviews in two parts. The first part provides a picture of what is happening in the project and the significance of what is being reviewed. The second part relates to formal agreement (acceptance) of the subject under review – such as system design, business process and system integration, test strategy or deployment plans.

It is worth scheduling reviews of (for example) a system design in an advanced draft in order to gain insight into what stakeholders and users think about it. Care is needed because this approach does carry risks and you do need to remind participants that they are not being asked to design or develop the product, only to suggest and comment on it.

Techniques – for example, workshops, prototyping, demonstration laboratories or joint working – will help to get users and other stakeholders involved in aspects of development.10

Note that the same warning applies here as to reviews. User product design is off-limits unless it is specifically asked for as part of the business context for the project. This will have been decided already and the techniques adopted will reflect that decision.

Standards for user, customer, operations and general business training. These are sometimes treated as the orphan children of systems development. Yet they provide a chance to connect with the people who will seal the project’s success by making effective use of what it delivers. Not only that but, compared to business participation in reviews, the attendant risk is much reduced as the points raised in a training environment pass through a process of ‘filtering’ via the training staff – something the participants should understand.

Give training its proper due in building consent. Why would you reject an opportunity to help people use the system well? Why would you reject the opportunity to detect faults in the product before it gets into the live environment? And why would you not do this as early as you can? Training is often tagged onto the end of the project, after all the important decisions about use have been made. Yet a training event using a prototype or mock-up of the system (even at the design stage) can make a difference to the value of the system to the business.

Plan training to start early in the project’s life.

PLANNING FOR FAILURE

‘We don’t plan for failure!’ We have come across this remark more than once –usually when discussing risk management. A recent example is from a BBC television programme that noted that the Home Office had been investigating how to block possible immigration from Greece, which, it was thought, might result from its financial crisis in 2010. One of the participants in the discussion strongly criticised this investigation, saying it was simply planning for failure and should not be entertained.

In our opinion, an organisation that does not ‘plan for failure’ deserves to fail. Indeed, it is much more likely to fail than one that admits the possibility that things might not go exactly as planned. Admitting this, appropriate responses to failure events can be planned. This is the essence of risk management.

In all ventures involving complex, new or difficult applications of technology, failure mode analysis is seen as a critical discipline. For example, in the nuclear and civil aviation industries, investment is made to analyse failure modes and their consequences. This enables design changes and other measures to reduce the chance that bad things will happen and to mitigate the consequences if they do. However, even if your project is not near the ‘bleeding edge’ of progress, you must pay attention to risks. Consider this project:

WHY DID THIS PROJECT FAIL?

Chapter 3, has an example of uncontrolled change management. The project was heading for failure and the customer was considering court action. It was well over budget and four years late (in a two-year schedule). No requirements changes were needed as the system, an air traffic control (ATC) software switch that ensures aircraft flight strips are always matched to the responsible controller, needed only a technical upgrade. So why, given this brief, had the project deviated so profoundly from its budget and schedule?

We found two events that could, together, explain much of the deviation. First, as we mentioned in Chapter 3, an instruction to freeze the overall ATC system functionality was ignored. The project team was therefore chasing a baseline that was never stable enough for them to complete the work. Second, about a year into the project, a government minister had been stranded in the air due to an error in the current system. An edict came from the government that this should never happen again – so the underlying technology was changed to incorporate ‘hot’ standby hardware to be used in the event of failure.

Though this was primarily a configuration management problem it was also a risk management problem. No one on the team or the ATC agency carried out a risk analysis to determine the effect of the government instruction, nor the effect of a shifting baseline. This would have been ‘planning for failure’ and was not entertained.

IN CONCLUSION

In this and the previous chapter we have discussed setting project objectives and designing a project to succeed. This work commenced because the executives, having seen an opportunity to improve or a necessity to act and then having investigated the likely benefits for the business, decided to invest in work that would design a project to deliver those benefits.

Having completed this work, the executives will be in a position to make the final commitment to investment. They will invest money, opportunity cost, time and possibly the reputation of the business in the project. The project foundation will be the result of the work to set out benefits, objectives and project design.

The executives can still decide not to commit further time and money. This can be counted as a success if the conclusion of objective setting or design is that the project is unlikely to deliver benefits to the business.

If, however, the commitment is made, the project will start. In Chapters 5 and 6 we cover the final preparation before the project is executed and concluded.