Project Leadership - Step by Step

Part II

Svein-Arne Jessen

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A Handbook on How to Master Small- and Medium-Sized Projects – SMPs

Contents

Background

This book is *Volume II* in a series of two books on how to master Small- and Medium-Sized Projects – SMPs. These projects are those that seldom receive serious attention in the regular project literature of today. For better or worse, it is the large, costly, complicated projects that are written about, researched and discussed in the media.

But as previously stated in Volume I, the popularity of the project approach means that many smaller, "everyday" tasks can be performed as projects. These smaller projects, whose goal and purpose are often very different from those of the bigger projects, also need a different type of assistance than the large and more complex projects. Preliminary studies are typical. They are short-term investigations put in motion to pave the way for a larger project, and require much less in terms of personnel for the actual project work.

The two books are written as a continuation of the Norwegian book, *Prosjektledelse Trinn for Trinn* (Jessen, S.A., 2005, 2008),[1] though it has a different format. While the Norwegian book's flyer idea is retained, in this book called S*tepstones*, the traditional tools for planning and controlling projects are replaced by much simpler tools. The new book further elaborates on what a project leader should do when confronted with *everyday problems*, things that happen outside strategic plans and tactical project dispositions. The focus is on how to lead *people* as much as it is on how to lead systems.

The picture on the front of this book is a simple illustration of what a S*tepstone* is. The photo was shot in Pompeii, and shows how people 2,000 years ago had to move about to cope with flowing rain water in the streets. They "stepped on stones" to get to their destination – in this case the other side of the street – and then they used their "Stepstones" in front of their doors in order to enter their houses. Project work is really much the same – finding a way to reach your destination and fulfill the project's mission.

In order to address these challenges, the books systematically reviews the "Stepstones" any project manager needs to negotiate, but primarily concentrates on the small- and medium-sized projects – the so-called *SMPs*. Every Stepstone begins with some theory before we explore the practical features. Our example project is to organize a small conference. The sections on theory include remarks on what has to be done in any project, regardless of size. Illustrations in the practical tools section refer to the conference project example.

In Volume I, the "upstream" steps in SMPs are presented, i.e. from Stepstone # 1, identifying the SMP, until Stepstone # 8, signing the contract and agreeing on starting up the project. Volume II presents the "downstream" steps in SMPs, i.e. from starting up the SMP, Stepstone # 9: The Kickoff Meeting, through executing, following up, controlling, completing and measuring success in Stepstone # 15. In addition, Volume II has three Stepstones on how to plan, control and manage risk in more detail, if it is found necessary to do so in the SMP.

The Norwegian version of the background book can be found at www.universitetsforlaget.no/smp/ (ISBN 978-82-15-01365-7) – that is the book Norwegian students and people engaged in project work in general should preferably buy, following the Norwegian *Løpesedlene* for support in their project endeavors.

An important message to the reader:

The books are meant for continuous updating by both readers and users! The field of Project Management is developing so rapidly that what was good theory and relevant practice yesterday may well be different today. For that reason, I would very much appreciate comments and ideas from everybody interested in improving this field. Please use the e-mail address below for any comments you have!

Svein.a.jessen@bi.no

Svein Arne Jessen
Professor, PhD
Slependen, April 2010

Introduction

As already contended in Volume I, most practical books and manuals deal with large, complex projects, which is not unnatural. Using projects to solve problems has never been more popular than it is today. By the end of the last century, 25% of the world's spending was managed through projects according to some reports, and many projects are clearly very large and very costly. Keeping track of them requires good management and good tools. Project planning and project organization need to be sound, and every step must be controlled down to the last detail.[2] If a large project starts going off the track and is heading for failure, it will cost the organization dearly and have many other adverse effects as well.[3]

But most projects are not enormous. Today, the project approach is equally used for smaller and simpler tasks.[4] To run these projects, which we in this book will call SMPs – Small- and Medium-Sized Projects – the tools and methods we need are much simpler. When projects are small, mistakes are often not as serious. And even if they end up doing something else than what was originally envisaged, lessons can be drawn and we can look at them as exciting experiments in new ways of thinking and acting. As the proverb says, "only those who get lost, discover new ways." One probably forgotten benefit of many SMPs is the excitement, not to mention the opportunity to learn. Indeed, a project may have unexpected benefits for its participants, clients and users.

While rigidity can be stifling, too little formality can easily create a mess. It is easy to go from flexibility to chaos or to lose sight of things when too much change is taking place at the same time. The best way of working on both large and small projects is to always ensure a good mix of *formality* and *creativity*. It takes rules and creativity for people to work well together in an innovative and effective manner, and the same goes for respecting each other and maintaining a sense of enthusiasm in order to help, support and stimulate cooperation.

These books have two main purposes:

1. They are recipes showing how small- and medium-sized projects, SMPs, can be run from start to finish so that better results are achieved. But many of the books' principles are also appropriate for larger projects and are intended to be universal regardless of the size and complexity of the project.
2. They are reference books that point to many common pitfalls at all stages of SMP management and leadership. Many of the pitfalls are specific to SMPs, but many are also found in large and complex projects. The books should therefore be useful as a work of reference for people involved in large and complex projects.

While Volume I covers all SMP preparation in Chapters 1–3, Volume II covers the major project steps of implementation, management, leadership and measuring the success of projects in:

> Chapter 4: How to Lead SMPs
> Chapter 5: How to Increase the Chances of an SMP's success

In each of the chapters, the book has introduced "S*tepstones.*" These are the backbone of the book and replace the traditional project "gates," formal recipes or similar, traditional forms of governance. At the same time, the Stepstone approach provides a "*model*" of how a project should be handled. This is because a model improves the coordination of human input, human reactions and the harvesting of experience. A good model breaks down barriers and reduces misunderstandings.

As in Volume I, two main areas of concern are discussed before each Stepstone: the *theoretical support* behind the statements within the Stepstone and a menu of *practical suggestions and instructions* on how to improve your scores at each Stepstone. This is because theory is always meant to be a wider discussion of a subject and to be taken out of a concrete decision-making situation, focusing on the *general aspects*, not the specifics.

In total, Volume II presents seven *basic Stepstones* and three *detailed Stepstones*. The latter deals with events that may occur in some SMPs, which are found in separate appendices and are meant to be used only if needed. The seven basic ones, however, are considered *compulsory* for any project, especially SMPs.

Every Stepstone comes with *10 questions* on important matters any project leader and key stakeholder should be aware of when running a project from its early stages to its final delivery and post-evaluation.

To ensure that we are on the right path, we need at least *80% good answers*. This rule is more or less based on the Pareto principle, which advises an 80% correctness or fulfillment rate in order to achieve further progress and development in many real-life situations. If we score less than 80%, we need to either go back and re-read the relevant text for that Stepstone, re-plan the entire project or simply stop it. The purpose of each Stepstone is to create a better understanding, better decisions and a better project progress.

The Conference Example

For each of the Stepstones in the book as in Volume I, a simple example of an SMP is shown in a frame and blue-colored text. The example is to plan and carry out a successful three-day conference for our company.Arranging a conference in many ways is a typical SMP since a successful conference for all involved and affected will depend on actions taken by the project leader before, during and after the conference.

While these steps are exemplified in each chapter in the book, SMP leaders do not have to slavishly follow them. They simply show how a project leader can use Stepstones in addition to some simple, but typical tools and methods to improve the chances of a project's success.

The reader should nevertheless know that since projects by definition are always unique, in principle there is no final management for our particular project or any other for that matter. How we act completely depends on what we are aiming to achieve with the project, on the project's mission, its Terms of Reference, TOR, the type of actors involved, the users and the wider project environment. Thus, the case presented is just an example of what can be done when working with an SMP.

9 How to Lead SMPs
Stepstone # 9: The SMP's Kickoff Meeting

9.1 Theoretical Reflections behind the Statements in Stepstone # 9

A point of major importance is the start of the project. The saying is that the kickoff meeting is "the number one platform for orientation and inspiration at a project's start to ensure that all involved have understood when the project is to start, it should be well marked. Aristotle (300 B.C.) suggested that the best way to form a team is to start with "pathos," meaning to form a relationship with one's team, and then onto "ethos," which is to sell one's values and vision, and then to "logos," which means to persuade them with logic. In projects, and especially SMPs this is best done by focusing on both actvities and decisions making at the same time. The focus on activities is achieved by holding a special start-up or kickoff meeting. All active and involved players are gathered together for a short briefing and discussion of what is expected of them, with the subsequent designation of the concrete start-up time, even down to the hour. The start of a project should be understood as a deliberate, active commencement of a project's work in which in a concrete collaboration over a short period of time an agreed basis for the management and control of the subsequent phases in the project is hammered out at the meeting. As the saying goes: "A good start is half the job."

The other important message is that an open and creative mind is as valuable as "following the manuscript." Studies have pointed to the following characteristics that *inhibit* people's ability to endeavor in changes, even the crucial ones, due to *too many fixed mandates* at a project's start:

1. Human beings tend to use *previous experience* when they evaluate a phenomena or the probability for something to happen.
2. When facing something new and uncertain, we tend to interpret the phenomena with something we have seen before. This is called *categorization*, and it could be harmful if it turns out that we have put something into the wrong category, which we often do.
3. We tend to interpret an incident from what is the most commonly *agreed upon* interpretation, that is, the interpretation that is most easily available at the time. We tend to use previous solutions to a seemingly similar problem, rather than preparing a new solution.
4. We tend to search for solutions in familiar ground, that is, as close to the problem as possible, although we then limit the search to known solutions from previous problems. We are not looking for the optimal solution, but for a *satisfactory solution*.
5. We tend to choose information that complies with our assumptions, and *reject* information that forwards new ideas and critiques.

6. Incidents that occur in sequence have a tendency to be interpreted as having some causal connection, i.e. they have a *cause and effect relationship*. In theory, this can easily make us draw the wrong conclusions.

All these confirmed observations show how easy it is to limit our creativity already at the very beginning of a project endeavour. Particularly is this problematic for SMPs where an open mind often is a prerquisit for project success.

9.2   Practical Reflections behind the Statements in Stepstone # 9

Information richness is at its highest when people work together face-to-face, and information richness declines steadily as people move from this type of interaction to using the telephone, letters, memos, bulletins and numeric documents. In other words, equivocality is reduced as people interact directly with each other and apply their experience and tacit knowledge.[5] In order to be successful, SMP work therefore needs to have a good kickoff meeting before the first concrete project involvement starts. This should take place immediately before the formal project start, simply on a Friday if the project starts the following Monday. The agenda should be simple and the meeting short. The participants need to at least be the project's Core Team members, but other relevant stakeholders may also be invited. The following points are essential:

1. *Pre-sent agenda* with information about who is obliged to be at the meeting;
2. "*Buzzing*" measures opening the meeting (hand shaking, simple physical activity, social networking);
3. Information, explanations and reflections regarding the project's performance *goals and objectives*;
4. Orientation about the project's *TOR* (especially time, financing and quality requirements);
5. Important *immediate* deadlines, significant individual budgets and other important statements;
6. Distribution of the *Milestone Plan* for the SMP;
7. Distribution of the *Cooperation Chart* for the SMP;
8. Distribution of the *Communication Plan* for the SMP (report plan and meeting schedule);
9. Enough time for *Q & A* about the goal of the SMP and a clarification round on other issues as needed;
10. Short *minutes of the meeting* – which must be sent out immediately after the meeting.

The total time for the meeting should be a maximum of 45 minutes.

The notice about the meeting must come at an appropriate time, though not too early (then it is easy to forget about the meeting), and not too late (then many are already busy with something else). The meeting must be given the highest priority, and the use of multiple communication channels is recommended (notes, e-mail, oral).

The meeting itself should be performed with the following in mind:[6]

1. Try to communicate with individual project Core Team Members before the kickoff meeting;
2. Memorize names on the first day;
3. Use body language;
4. Ask invitational rather than inquisitorial questions;
5. Democratize voices;
6. Report back with intelligent restatements;
7. Use variety in the way of expressing important topics;
8. Culminate the meeting in a way that makes closure natural.

The start-up meeting is the project leader's best time to begin the completion of the SMP's *logbook*. The book is a very simple notebook in which all the important decisions, milestone passages, thoughts, negotiation results and ideas are written down. The book should be as informal and personal as possible. The logbook is not part of the public domain; it is the project leader's personal follow-up log.

9.3   Conclusions about Stepstone # 9

To make sure the project kickoff meeting is working properly, Stepstone # 9: "The project's kickoff meeting" is recommended. Although many of the questions concern preparation and communication, it is important that the total score is minimum 40, or in average 80% of the questions are answered positively. This ensures that the project's key people understand the SMP's purpose and are enthusiastic about the project's goals.

In conclusion:

The best motivation presupposes that everybody participating in the meeting agrees that the project's mission and goals are attractive and realistic.

The best communication comes from a full understanding of what is expected in terms of effort and work in the project from day one.

The Stepstone should be filled in by all relevant people and be available for discussions afterwards, if found appropriate. A good start is the best way to encourage people to do a good job.

9.4   Stepstone # 9 Used on the Conference SMP

Stepstone # 9:   The SMP Kickoff Meeting

		Very little		Medium		Very much
The degree of agreement:		1	2	3	4	5

1 To which degree has the Project Leader clearly **announced** when and where the first meeting in the project, the "Kickoff" meeting takes place?

2 To which degree has the Project Leader been able to inform all present participants **when** and **why** he or she was first **brought in** as the Project Leader or the potential Project Leader?

3 To which degree has the Project Leader been able to describe his or her **mandate,** i.e. the combination of authority and responsibility, especially in conflict situations?

4 To which degree has the Project Leader been able to explain how he or she will **execute** the project, also when not physically present?

5 To which degree has the Project Leader already at this point in time announced who will **take over** the Project Leader responsibilities if so required?

6 To which degree has the Project Leader concretely described the roles of all individual **AoR** (Areas of Responsibility) persons in the project?

7 To which degree has the Project Leader described why project Core Team members will cover professional areas **outside** his or her competence if and when necessary during the project`s execution?

8 To which degree has the Project Leader in the meeting told how he or she is **convinced** the project will be possible to complet within its given TOR?

9 To which degeree can it be assumed that all participants in the meeting have achieved a full **understanding** of what is expected from each of them from the the moment the project is officially started?

10 To which degree after the meeting has the Project Leader distributed two A4-pages: the **first** containing the project mission, the agreed project goal, the project`s TOR, the project principal(s), and the major project financial and technical obligations, and the **second:** the agreed Milestone Plan for the project?

Total Score:

Stepstone # 10: The Daily SMP Operations

10.1   Theoretical Reflections behind the Statements in Stepstone # 10

"Management" is a key word that suits large and complex operations in which deviations are very costly and coordination tightly imposed. But management is also a straitjacket. There is often a one-sided focus on results and far less, if at all, on the daily work quality, motivation and building of relationships.[7]

That is why there is a well known difference between management and leadership, in the sense that "managers follow the rules, while leaders make the rules" (or even "break" the rules). In SMPs the best way to manage, is to *lead*.

It is easy to forget that all projects are completely dependent on how the leader runs the daily operations. It does not help to have chosen "the best project," made an excellent project plan, implemented a perfect steering and control system and a technically solid organization if one is not capable of mastering the daily work, making good daily decisions and communicating well.

Traditionally, communication is perceived to take place by either verbal or written means, though both methods can be lengthy and time-consuming. Even if meetings are the best place to enrich communication, it takes time to convene and hold meetings as well as to write and distribute reports. It is far more effective to mix meetings with modern information and communication technology (ICT). Two very fast communication methods available today are:

1. The use of Intranet and Internet
2. The use of mobile telephones

Both desktop computers and notebook PCs provide enormous opportunities for reducing the amount of time it takes to communicate by producing project results quickly and efficiently. With the use of simple technical aids, plans can be updated on a daily basis and accessed by any project member almost regardless of where he or she may be located. The so-called "*virtual project office*" has the precise advantage of being able to reach you anytime no matter where you are in the world!

The same applies to *mobile telephones*. Through direct oral conversations, SMS messages or mobile images, a project can be updated on a moment's notice, and appropriate action be taken without delay.

One technique that focuses on how the project leader shall handle daily operations through a mix of meetings and ICT in his or her communication in the Six-Box method. The starting point is to regard project leadership as being a communication hub that is responsible for simultaneously operating with six influential factors arranged together in an interrelated pattern, as demonstrated in Figure 4.1:[8]

Figure 4.1 – The Six-Box Model

The boxes on the left pertain to the project's "cultural aspect" and the ones on the right to its "structure". As indicated by the uppermost circle, project work is inherently goal directed. It satisfies the need for a common denominator for both leaders and workers as far as when the work is to be performed. Defining pre-determined goals indeed one of the basic instruments of the project work approach and the factor that governs the allocation of resources and provides the background for the decision-making process. In a society which in many ways has abandoned the religious and social preconceptions of the past and organized itself to meet the demands of "rationality", a particular type of rationality is fostered which consists of *gaining control over the means* of achieving predetermined goals. This *creates a structurally-oriented rationale* which promotes effectiveness in the production of goods and the organization of services. This structural side is further strengthened through various types of methods and techniques that work as a tool box for helping to streamline the structure. Typical examples are network techniques for project planning (PERT, CPM, Prima Vera, MS-Project), different types of project organizations (matrix organization approach, PSO techniques[9]) and decision-support techniques (IRR[10], BSS[11], ZBB[12]). But this type of rationality can easily become deterministic, mechanical and streamlined – meaning that one can risk forgetting the *values* that are supposed to justify the goal.[13] As a consequence, it has become vital to strengthen the *relationship* among the people taking part in the project to ensure that they understand and accepts its goal, communicate sensibly with the project manager and accept the common relationship. There are other types of "tools" for this purpose, i.e. a varied selection of reward and punishment systems. The project manager should also be familiar with them, be able to communicate them well and be able to apply them sensibly and creatively. In today's business climate, it is just as important to spend efforts on the cultural aspect as it is to care for the structural side.

The model is suitable for organization analyses in general, but is particularly valuable in a project context. In many ways, the figure can be seen as a mirror image of the evolution and growth of the managerial project concept since its emergence as a problem-solving tool in the 1950s.

At that time, the pendulum had swung well out towards the structural and tool extremity. It was decisive, and was thought to have good planning and organizational structures in place to reach project goals successfully – and there was a sizeable number of tools to choose from. In the 1960s in particular, much of the project work was dominated by Operation Research (OR) techniques such as linear programming, sequence optimalization and so on. In other words, the project arena was dominated by "engineers".

In the 1980s, the pendulum swung to the opposite side, the diagram's left-hand side. Nearly everything seemed to revolve around sensitivity training and "soft values". Projects were considered especially favorable for lifting human relationships to a higher level. Soon, "tools" such as transaction analysis and other psychological devices were being imported, and a great deal of time was being spent on discussions about what it was that motivated and demotivated people. The source of much of this was the Human Relations Movements at the time. Faddish consultancy firms and personnel departments were often dipped into and tried out in practice.

Today, they excite less. In any case, one should not let the pendulum swing to any one side. If it swings, it must do so in harmony with where one happens to be in the lifetime of the project. The type and size of the project should affect the pendulum's amplitude and direction as well. In addition, it is clear that this undulation of the pendulum is as much the responsibility of the project leader as it is a random phenomenon, whether desirable or undesirable. In the future, modern project leadership will probably have to incorporate this responsibility to ensure that the swings of the pendulum are both sensible and beneficial.

The project leader must be able to encourage the team to make a contribution within reasonable limits and understand how to improve relationships among them. Here, the manager can use psychological and economic mechanisms to carefully weigh what might be considered a good reward – or punishment – in each individual case. A reward need not be understood in terms of wages alone, but as a sensible reward system or the allocation of stimulating tasks with a view to practicing and developing the team's knowledge and skills. Punishment can mean taking people off tasks they are performing unsatisfactorily or if they are making a nuisance of themselves or causing problems in other ways.

Teams in project-oriented organizations will often have people from traditional line functions in one or several basis organizations as their members. This presents a risk for multiple conflicts within the groups themselves and between teams. The project leader must learn how to tackle both inter- and intra-group conflicts in order to enhance productive elements and reduce the number and extent of the destructive ones. This means that each project must address and analyze potential team conflicts, particularly the types of conflicts in which the members tend to be more interested in winning than solving problems.

The level involved within the organization or principal also has an impact. One can say as a rule of thumb that the higher up the project is anchored within an organization, the more important it is that the project leader has total insight both administratively and professionally. In this context, time, budget and technical goal achievement will be important preferences. The further down the organization, the more important it is that specialist competence remains high. If this is ensured, quality, high standards of performance and reliability will prevail.

In addition to all this, it is important that the project leader's administrative level corresponds to the decisions he or she is expected to be making. The way of communicating and the decision-making structure must therefore be carefully laid out and agreed upon beforehand. If not, the project can suffer unnecessary delays or grind to a complete halt. The earlier the project leader is brought on board, the earlier he or she will be able to build an understanding of their professional and decision-making responsibilities. Having done this, he or she will be in a position to create or shape their own mandate in the transition between the initialization of the project and the planning. Not only does it pay to have the project leader play a role in the early, creative phase during which problem analysis and objectives are discussed, but their participation will also ensure a good personal assistance in the actual project planning phase and execution, thus helping to prevent many unforeseen problems from arising. Moreover, studies have shown that project leaders who are given the opportunity to participate in the planning of the project will be better leaders, and their performance success rate increases significantly.[14]

A good understanding of how a good project leader should deal with this is illustrated by the two other key words in Figure 4.1. Using "global" thinking on the structural side means that methods, techniques and structural amendments are implemented wherever the project may take place in the world. Most of these follow well-known international standards and can be read about in books and manuals that can be used on any project.[15] "Local" thinking means that the project manager must assess the situation where it is geographically or organizationally taking place. Reward and punishment are very much conditioned by culture. What is perceived as a penalty in one culture can be a reward in another. Similarly, relationships can be perceived very differently, depending on the personal background of the project participants, their mental assumptions and their beliefs. What works best can only be experienced by possessing knowledge of the local culture where the project is taking place, so a project leader should make an effort to become acquainted with the local project environment. A modern keyword for this attitude is to be "glocal," i.e. combining the "global" view with a "local" understanding. As a rule, a confident project leader will ask knowledgeable subordinates for suggestions, while a nervous project leader would never do that. Good project leadership involves playing on all these strings simultaneously in order to:

1. Start out with the best project;
2. Execute the best project; and
3. Complete the project in the best way.

To accomplish all this, one needs support functions, i.e. "watchdogs," to help ensure that these three steps are performed in the best possible way. How these watchdogs should work is illustrated in the model below in Figure 4.2. Such models in more detailed form are often referred to as "waterfall models" because they successively move "down" from the project's initiation to its post-evaluation, at which point the project calms down after its completion.[16]

Figure 4.2 – The Waterfall Model[17]

It is the bar in the middle of the waterfall which is the actual project development. The two nearest guard watchdogs are the project plan and the project monitoring and control system. They will growl, bark and even bite if necessary. A project plan is an important watchdog because it tells how the project was thought to be implemented in the best possible way based on the available information at its starting point. It is therefore a good reference and great help when one is in doubt about what to do. But the arrows between the plan and the execution go both ways, pointing to the need for *interactivity*. The project follow-up is the other important watchdog. It checks whether one is adhering to the plan or not. It is the deviations from the plan that make the project manager react, and this part shall also be as interactive as possible.

In simplified control theory, there are two types of project follow-up:

a)   Technical/economic follow-up (the cost and quality of the work done);
b)   Social follow-up (which measures the health, safety and environmental issues –
     the so-called Human Resource Management (HRM) follow-up).

The technical/economic follow-up mainly consists of registering real quantifiable progress and measures against the planned, quantifiable progress. Cost engineering in large projects follows the prescription that engineering judgments and experience are utilized in the application of scientific principles and techniques to the problem of cost estimation, cost control and profitability. The purpose here is to compare efforts with plans and performance against targets in order to draw the project manager's attention to potential cost overruns early enough so that corrective or cost reduction measures can be implemented. In this way, one tries to always be fully aware of the status of the project. It is also important to consider whether the external conditions, the TOR, still apply.

In principle there are two types of deviations when one controls a project:

1. Discrepancies that are not needed to be worried about.
2. Discrepancies that are needed to be worried about.

Small deviations cause the least amount of difficulty. Nevertheless, even small deviations should be checked. It is said that the big, serious deviations consist of the many small, daily deviations that one hardly notices. Perhaps a small discrepancy is the start of a bigger, more unfortunate trend? Is the deviation small in relative or absolute terms? Is the discrepancy caused by a random coincidence, or is there a deeper reason behind it? These are important questions since there are at least three major factors that limit our ability to be rational decision makers when deviations occur:

1. Individuals seem to have an *aversion* against accepting something that could be described as a failure, setback or loss. It is easier to make a different decision and use energy to defend that decision than it is to evaluate the other alternatives.
2. The evaluated value of an alternative depends strongly on the wording of the specific alternative compared to the other alternatives, as we tend to choose the alternative with the most positive *wording*.
3. Human beings have a tendency to *identify* themselves with groups or teams of other human beings, thus taking actions based on how the decision is going to affect the team. This is a form of nearsightedness in which the primary concern of the team is to find a solution that is best for them, but not for the totality.

To better enhance a current situation, three simple questions should be asked in principle:

1. What is the situation *now*?
2. What has *happened* so far?
3. What will most probably happen in the *future*?

To accomplish this in large and complex projects, the "360 degree leader" view is recommended. This means that project managers must think "upward" against the leadership and sponsors, "outward" towards the users and customers, "forward" on strategy and plans, "downward" towards their own team and subordinates, "inward" on their own attitude and behavior and "backward" on a project's history, accounting and rewards.

10.2   Practical Reflections behind the Statements in Stepstone # 10

The practical results of monitoring and control could be that something in the project must be changed. In practice, a project could be deferred because of three types of changes:

1. The project must be changed because the original assumptions and its TOR no longer hold.
2. The project must be changed because a superior authority or the client has so decided.
3. Something in the project must be changed, but within its TOR.

In the first case, it is the project leader's duty to inform the responsible decision-making authority of the reasons that drastic change efforts should be made. It is rare that the project leader has the authority to issue such a change. The project leader's responsibility is to fulfill the goal and purpose of the project within its given TOR. The authority to change a project's framework conditions lies at a higher level. If the changes are significant, it will be the project leader's responsibility to search back into the Stepstone structure to find the best place to start in terms of new progress and then try to obtain the authority to implement this.

If it is the client or a superior project body who decides on the change, the situation is different. The client is normally the project's highest authority, and required changes are automatically authorized to the project leader to implement. Nevertheless, the project leader has a responsibility to put forward reasonable *consequence evaluations* of what the changes will entail. If these consequences are accepted by the client it will, in much the same way as with self-initiated changes, be the project leader's duty to search back in the Stepstone structure to identify an appropriate restarting point.

In the third case, the practical principle is that changes within the agreed TOR are something every project leader should have the authority to do without asking anybody's permission, even changes due to failure since a failure after all is a learned response.

Both social and HRM follow-up should always be done in close contact with the key individual employee, and such follow-up is based on trust and respect.[18] Whether it is at a meeting or through observation, if the project leader discovers that most is going well, there is no reason to initiate individual or organizational control measures. It is only when more serious problems are uncovered that one should not hesitate to take action. In principle, the following possibilities should be considered:

1. *Reducing* the demands on key people if they feel the requirements are too large with respect to deadlines, workload or feel an obligation to conceal a negative or positive emotional attitude.
2. *Increasing* an individual's control if they feel they have little opportunity to influence their own work situation and learning opportunity.
3. *Improving* the social support around an individual if they feel they lack practical help, emotional understanding or are getting too little relevant information.

If the deviations begin to grow too large, it is time for a far more systematic and deeper control. At this point, it is not enough to call meetings to discuss requirements and redemption forms. An investigation must be started as quickly as possible to discover why there are discrepancies and what the consequences may lead to. The purpose of these more in-depth assessments are not just to measure the size of the deviations, but also the effect they may have on the total project. Conditions that may be uncovered are the multiple effects of cost exaggerations, the impact of obligations or the effect of replanning the entire project. Specifically, it is important to clarify the consequences of serious changes in the project's TOR. Large changes can simply make further progress impossible and the project must be closed down.

An intrinsic part of project control is *project reporting*. In large projects, there has to be an established routine of preparing *monthly status reports*. A good status report includes:

- A Cost Overview
- A Forward Plan
- Progress Charts
- Cost Development Charts
- Cost and Schedule Indexes
- Prognoses of the Total Work Scope
- Accrued Liabilities
- Prognoses for the Final Cost

Social *impact assessments* must also be conducted, which can prove to be very valuable. Small changes can improve key project team member's motivation. Small changes in responsibility and status can make people more diligent, impact their skills, make their job content more motivating, enhance professional communication, create changes in their social network and collaborative relationships, ensure flexibility and that a degree of frustration and stress can be mediated, and so on.

Improvisation in this context is a combination of intuition, creativity, and bricolage. Improvisation and intuition represent two important and related aspects of leadership in general[19] and in the leadership of SMPs in particular. The leadership of an SMP in principle is *not* "project management." The SMP leader must be prepared to invent quite a few rules on the way to the final goal. Therefore, to lead an SMP often means imposing rules that are different than those applicable to the large and complex projects. In addition, we not only lead "someone," but also "something." For this reason, one must ensure that both the technical and economic progress plans work and that they do this through good relationships and close contact with the project staff and other stakeholders. What separates the good ones from the really good ones is the amount of implementation capacity![20]

Using the six-box model from theory, the first thing to be aware of in SMPs is that good relationships seldom develop automatically. Relationships must be cultivated, and the instruments are rewards for good work done, credit for determination and work enthusiasm, recognition for providing support in adversity and infectious enthusiasm in teamwork. In addition, the project leader must have reasonable "punishment" mechanisms such as having the authority to tell people to leave if they are socially difficult and destroying good teamwork, rebuking ill-performed work, etc.

It is at the center of these measures and working methods that we find the modern SMP leader. It is our ability to cope with such conditions in both the long term and daily operations that characterizes good project leadership, which must be present in all phases of an SMP. According to studies[21], there are five "*mortal sins*" that make projects fail. The first is *over ambition*, i.e. that the project leader wants to do more than is really necessary and are blinded by what can potentially be achieved. It is important to remember that with today`s technology pretty much anything is feasible, but not at the same time, within the same project and on a limited budget. The second is *prestige*, often linked with ambition. The project manager having an arrogant and overconfident attitude towards team members, clients or other managers in the organization. The third is *ignorance*, i.e. poor understanding of SMP`s goals and mission of the business can quickly lead to your SMP heading in the wrong direction or even breaking down. A similar ignorance is "rational ignorance", that is, stakeholders feel that it takes more effort than it is "worth" to keep themselevs informed. A fourth sin is *absence*. Which can be due to many reasons. Absence of project members is clearly visible because it leads to a direct decrease in production. But absence among decision-makers, such as steering group members, are more difficult. This is not always reflected in the amount of time they spend working on it. Few things can be as damaging to a project as when people expect to influence and be involved in any decision taken without spending time on it. If somebody want to inlfuence your SMP they should be there when decisions are made, not just checking them retrospectively. The last sin is *dishonesty*. That is concealing facts from a project owner or project member. It can involve creating advantages for personal gain, but in many cases it is more likely that a project leader is simply too nervous to tell the whole truth.

In SMPs, it is the capacity of the project leader to be a decision maker that really counts. Rarely can we make completely rational choices based on clear goals and complete information.[22] Very often the decision-making situation in SMPs are disturbed by power struggles and conflicts among stakeholders, both inside and outside the project, simply because the project is small and easy to overthrow in the view of many. The project leader must often accept random external requirements, and "political" decisions can influence a project, though many of them are not necessarily in favor of the SMP, but instead are to the benefit of the project's external stakeholders.[23]

In modern, democratic knowledge-based societies, it is expected that decisions are primed by being built on solid study and agreed on through thorough discussion. In large and complex projects, this type of thinking is seen as being a good, general rule to follow.

In SMPs, common sense, *intuition*, instinct and "gut feelings" are all equally sensible. Skillful SMP leaders put much more emphasis on intuition than pure analysis when moving into new and unknown terrain. The reason for this is that intuition is also a form of analysis. This form of analysis does not filter away what we often tend to regard as non-significant data simply because we cannot find a "model" that fits. Besides, decisions based on instinct are a lot faster, and do not meet the resistance and "inertia" that complicated decision-making processes can often suffer from. Through intuition, we also open up for more opportunities for exploring human and organizational creativity "capital" as value-creating sources.[24]

A crucial area of concern is always money and budgets. SMPs must also keep track of how much is being spent compared to how much was planned on being spent, so in this respect there are a few major components to focus on as illustrated below in Figure 4.3:

Costs items in SMPs	Comments/descriptions/characteristics
Budget	A complete and realistic picture of how much money is assumed necessary to reach the goal
- Payed out	An updated and correct picture of how much money has been payed out
= Rest	A realistic picture of how much money is still available for reaching the goal
- Committed	An updated and correct picture of how much additional money is formally and informally committed
= Status	A realistic picture of how much money is still not used and committed

Amount produced	An updated and correct picture of how much has been produced
+ Prognosis	A realistic judgement of what still has to be done

= Final result	Best picture of the total cost for completing the SMP

Figure 4.3 – Simple financial status report for SMPs

The most important issue is the "status," which tells us how much is still available for the completion of the project. This is measured against how much is made or produced of value for the project, or the "*Earned Value*" (discussed later in Paragraph 11.3) at a current point in time in relation to how much remains to make or produce. This assessment focuses on both how much work *remains* to be done and how much capital is available for doing it. For most SMPs, such simple juxtapositions are enough to obtain a realistic picture of the three dimensions: the situation now, what has happened up until now and what will most likely happen in the future.

If we find the deviation from this overview to be alarming, we follow the arrow in the Waterfall Model (Figure 4.2) back to Project Execution and discuss the situation.

It is very important for SMPs that this process is not made more complicated than necessary. The follow-up shall not be a heavy and complicated control, as the problem with using a heavy and very detailed control is that it is often not perceived as being meaningful for those working on the project. The working situation is continuously burdened by monitoring and control and felt to be highly stressful, especially if the controls are conducted on a frequent basis. Maintaining extensive controls also cost time and money that is normally not part of the project plan, and becomes an extra financial burden.

With SMPs, the follow-up can be as simple as talking with employees, skimming over progress reports or just having some personal thoughts on how the project should evolve based on common sense and intuition. As has been previously mentioned, we need as much as possible to avoid the strict control of SMPs. Producing elaborate "project handbooks" for SMPs is therefore not recommended and it is far better to use the "gardening method." When a good gardener creates a garden, he or she plants some trees here and some roses there. Then they watch how things progress. If the trees do not grow well where they are, they are moved to another location, with the same for the roses. Over time, they will attain the best results by being flexible and patient. We need to take the same attitude for the goals of our SMPs. As good "gardeners," we always look for the best possible development for our SMP, though we must lower our aspirations if the original goal turns out to be too ambitious. To achieve success, we need a lot of communication and reflection on the way we have chosen to reach our goal. In reality, it does not matter so much which "method" or "technology" we use, it is the "gardener's" knowledge and understanding of the situation and its possibilities that lead the way. Thus, we increase our chances of ending up with the most successful garden.

Reporting is a subject that requires some serious attention. It is expected as well in SMPs that some form of reporting takes place as an aid to progress. In principle, we distinguish between two main types of SMP reports: *status reports* and *management reports*.

Status reports in the major projects are detailed accounts of the project's current situation, including what has been done since the last report and what can be expected further ahead. In SMPs, it is most natural to focus more on what *could* happen than what *has* happened, which means fewer historical details and more future evaluations.

Management reports are brief reports that focus on what will be the most probable situation at the project's end and what, if any, desirable decisions need to be made in this respect from the project's owner or client. In SMPs, such reports are often far more important to produce than status reports, and the project leader must assess in the planning phase how often and in what form these reports will be produced.

The normal content of management reports is:[25]

1. The degree of goal fulfillment and thus the project's anticipated profitability or contribution value;
2. Stakeholder satisfaction with the progress so far;
3. Compliance with the timetable in relation to the project's end date;
4. Compliance with a budget in relation to the total grant;
5. An update on major changes that have been made (imposed or self-initiated by the project's Core Team members);
6. New requirements for changes or adjustments in progress.

But as described in Figure 4.2, modern projects have two more watchdogs, which are the "project initiation phase" and the "project post-evaluation phase." *Project initiation* consists of the processes that evaluate whether this was the correct project. *Post-evaluation* are the processes that assess whether the project was the right thing to implement in the first place.

SMP initiation is already discussed in Chapter 2, and even more closely evaluated in Stepstone # 1, "Screening the Project Idea" (Volume 1). Here, the project is created and the post-evaluation for the SMP is conducted after the project work has been terminated. In much the same way as the choice of the right project was a function of the purpose of the project, the post-evaluation of the project is an assessment of the degree to which the project contributed to its original mission. This "post" or "after evaluation" has received increasing attention today. If the project reaches its technical goal but its result is not used, it is likely that the project was not the right one after all. A report nobody understands, a system that is not used, a product that no one buys and a new road without any traffic are all examples of projects which technically may have fulfilled their *result target*, but do not have the *effect* hoped for or envisaged. If we are in doubt, it may be wise to approach an outside, unbiased person to assess whether our SMP has reached its goal. If that person has problems with the project, whether it is with the final result/goal or even intermediate goals, there is good reason to be skeptical of our self-assessment of having reached the fulfillment of our goal.

One element which unfortunately has been more and more necessary to point out is that of an *ethical stance*. In particular, SMPs bring a project leader much closer to his or her employees than does traditional project work. For that reason, the leader's behavior and attitude are much more closely observed. If the leader behaves or acts unethically, this can be a signal that this is acceptable or that the leader becomes discredited because he or she carries forward values which conflict with honest behavior. In SMPs, ethics are not supposed to cause any rear lights to be put on employees, colleagues, bosses, competitors, suppliers, clients, family, friends or even yourself! Ethics are a personal matter, and the lack of an ethical attitude can discredit even the best projects, as the environment will become skeptical and negative to what is presented. It is therefore of the utmost importance during project work that we continuously consider whether what we do, the activities we undertake and what we decide have a content that both captures the ethical dimension in its daily operation, as well as the monitoring and controls set forth in the project's plan.

Whatever the type of project, we will never be 100% confident and safe that we are doing everything correctly and achieving exactly what we are aiming for. In many ways this is the essence of the Garbage Can Theory[26] which states that an organization is a collection of choices looking for problems, issues and feelings looking for decision situations in which they might be aired, solutions looking for issues to which they might be the answer, and decision makers looking for work. Problems, solutions, participants, and choice opportunities flow in and out of a garbage can, and which problems get attached to solutions is largely due to chance. For SMP leaders these situations are typical, It is more our mastering of the dynamics of everyday life that gives us confidence. Nor is it possible that everyone can be treated equally and fair at all times since equality and fairness are two very different things. In any case, the best thing to do is to be an optimist. A pessimist and an optimist are usually equally correct, but there is no doubt about who creates the most pleasant environment. The important thing for a leader is that people understand that they are important, that they are recognized and that they are respected. Show consideration, but do not expect ovations for everything we do as leaders. When it comes to criticizing others, it is a good rule to ask for explanations before criticizing. In a project, it is the weakest that need the most help, while the strongest usually make it no matter what. Correct decisions are often unpleasant to make and even more unpleasant to take. It will always be best that decisions to change or improve something come from above. Bolman and Deal have found that there are four different frameworks for modern leadership illustrated below in Figure 4.4:

Framework / Process	Structural management	Personnel-oriented management	Political management	Symbolic management
Good management	The manager focuses on planning and analysis	The manager focuses on delegation and support	The manager focuses on collaboration and enthusiasm	The manager focuses on invigorating and interpreting
Bad management	The manager focuses on orders and over-detailed management	The manager backs out and renounces responsibility	The manager is a power-hungry hypocrite and imposter	The manager deals in illusion and bluffs

Figure 4.4 – Differences between good and bad management processes within different frameworks (Bolman and Deal, 1991)

As demonstrated by the table, well-formed plans and thorough analyses can also result in undesired micro management and a power-mad commando culture. Likewise, a high level of delegation and wide-ranging support systems may also cause a denial of responsibility, demotivation and indifference. As a result, selecting the right type of people to fill leadership positions is extremely important for SMPs because we tend to need all four frameworks at more or less the same time. The wider span of SMP leaders often forces us to frequently take on different roles and attitudes during a project's development. We have to be "structured," "human," "political" and "symbolic" depending on the situation. The problem is that "good" leadership can easily become "bad" leadership as illustrated by the two boxes under each framework description. Political wisdom is good, political manipulation is bad, while symbolic emotional intelligence (EI) is good and symbolic "theater" is bad because it creates uncertainty and insecurity. But we must accept that this may well be the case and must be mastered in most SMPs if they shall succeed.

10.3   Conclusions about Stepstone # 10

To help in the effort to assess the extent to which an SMP meets these requirements, we use Stepstone # 10. Most of the statements are directly related to the six-box model. If the total score is 40 or higher our SMP is most probably in good shape. With fewer "yes" responses, a more thorough analysis should be performed.

This Stepstone is meant to be run many times during a project's operation, e.g. when passing important milestones. No matter what, the rule of 80% highly satisfactory responses will apply to ensure a further and continuing sound progress.

In conclusion:

> The most important factor in terms of motivation at this Stepstone is that the project's co-workers feel they are valuable and important to the project's success.

> The most important thing for good communication is the perceived degree and type of progress taking place in addition to the decisions made on major issues.

10.4   Stepstone # 10 Used on the Conference SMP

In large projects we frequently find Project Administrative Handbooks that the project manager is more or less obliged to use. In larger companies, these obligations are usually agreed on as forms to be filled in with significant information about the project's background, objectives and progress plans, and it is distributed to all appropriate agencies. The problem is that these manuals often become quite bureaucratic, have heavy solutions and indirectly advocate certain machine-oriented management philosophies that may not suit all users.

For SMPs it is a far simpler solution that the Project Leader has his or her own private *logbook*. In the book, he or she will not only write down all the important events such as the passing of milestones, meetings, documented and non-documented decisions, development terms and changes, but will also use it as a "diary" of sorts for matters which have turned up along the way and should be taken note of. In addition, problems, personal thoughts, interesting information, etc. are natural to note. The logbook is not a diary per se, but a brief reminder of a project's actual development.

The logbook must be a permanent fixture in project meetings. The views from the project's key employees are important log information. All changes of importance are set forth in writing in case any doubt should arise later as to what was discussed and decided.

Simplified, three possible situations for our SMP can occur:

1. After the follow-up is conducted, we interpret the deviations to be so small that there is no reason to initiate greater impact assessments with the involvement of the major SMP stakeholders. The project continues according to its original plan, perhaps with some minor adjustments within budgetary and other planned parameters.
2. The deviations are too large for our SMP to continue according to its original plan. The reasons may either be that the work was not been carried out well enough, the decision process has failed or that the project plan simply does not fit anymore. In these cases, we may have to go as far back as the planning stage, Stepstone # 7, "The SMP Master Plan," and consider replanning parts of or the entire project.
3. The deviations are so large that the project must be stopped. As the project leader, this can happen as part of our contract when we have a "force majeure," (See Stepstone # 8 in Volume 1, "Agreements and Obligations in Projects") that we feel obliged to use, or when superior authorities stop the project on the basis of the control information they have received or even for other reasons unknown to us. The latter case of course is very unfortunate, although a superior body on a higher level than the project's Core Team, including us as the project leader and even the project's Steering Committee, can decide to do so and overrule us if they feel it is necessary. The boss is the boss!

In this way, use your "plan" and "follow-up" like two keen watchdogs, which we as project leaders have to listen to and act on in the best possible way for our SMP.

Stepstone # 10:   The Daily SMP Operations

	The degree of agreement:	Very little 1	2	Medium 3	4	Very much 5
1	To which degree up to this point in time has the project been able to follow an agreed upon **meeting agenda** ?					
2	To which degree up to this point in time has satisfactory information about the project`s **progress** been distributed to all relevant project participants?					
3	To which degree up to this point in time have the project`s Core Team members participated when important **discussions** and **decisions** within their area of competence have taken place?					
4	To which degree up to this point in time has key progress information, including **deviation consequences,** been distributed to all relevant parties?					
5	To which degree up to this point in time has important **adjustments** to the project`s progress been effectuated following consequence analyses?					
6	To which degree up to this point in time have important **external stakeholders** been kept informed about project progress?					
7	To which degree up to this point in time has project staff been clever in **informing each other** about project the progress and development within their own AoR?					
8	To which degree up to this point in time has the Project Leader demonstrated both **firmness** and **flexibility** in the daily execution of the project?					
9	To which degree up to this point in time have **decisions** made by the Project Leader been **agreed** upon and followed up by the majority of the project`s staff?					
10	To which degree up to this point in time has the Project Leader been **delegated** sufficient authority from project superiors in terms of making important social, technical and financial decisions to enhance the project`s progress?					

	Total Score:	

Stepstone # 11: Daily SMP Technical Activity

11.1   Theoretical Reflections behind the Statements in Stepstone # 11

Daily project work consists of course of carrying out scheduled activities in the best possible way. As previously mentioned, in theory all projects should have plans. They may consist of work packages which assess what needs to be done. This can include everything from simple milestone plans to bar or Gantt diagrams to advanced network diagrams. The plans tell who shall do what, and as watchdogs they tell who should have done what, and which conditions should apply.

Technically, there are three conditions the project leader and his or her team must deal with: time, quality and money. The interactive relationship between them is illustrated in Figure 4.5:

Figure 4.5 – A project's "Iron Triangle"

The three ovals constitute any project's minimum framework and are known as "*The Iron Triangle.*" But projects can also have other constraints of many different types such as legal, moral, ethical, religious and cultural. Time, resources and quality are, however, mandatory constraints in all operations decided to be run as projects. Looking back at the Waterfall Model, the arrows between the blocks go both ways which is also the case in Figure 4.5, illustrating that even during the planning stage, it is important that there is a balance between what one wants to make, the resources one has access to and the available amount of time.

In large and complex projects, the work volume, time and resource costs are all closely connected. Working volume is normally estimated from previous experience. Together with the time and costs, they constitute the project's follow-up references. The total follow-up reference is normally expressed in special CTR diagrams (Cost-Time-Resources). CTR diagrams may then be combined in special CTR directories that act as basic management tools for projects.

11.2   Practical Reflections behind the Statements in Stepstone # 11

In SMPs we do not need an absolute consensus on all parameters from the very beginning. For many SMPs, it is the *quality* that is most important. The customer or client signifies what he or she wants through an agreed upon quality. From this, we plan how long the project will presumably take and then prepare a budget for how much it will cost or demand from the people involved. But quality is nonetheless a multifaceted concept. In large projects, quality is measured against standards and specifications. In SMPs, quality often reflects the client's more or less clearly conveyed expectations about the finished product or result, which is a measurement of the *desired quality*. In some SMPs, the mission is to then make as good a quality as possible from a given amount of resources and a given deadline. A third option is to promote a desire based on the significant resources available and through planning find out how long the SMP is likely to take.

In conclusion, the limits for SMPs are not necessarily as completely fixed as revealed in Figure 4.5. It is more important to discuss with the customer, client or user the preconditions under which the project can be allowed to be changed if necessary. If the user wants the best quality within a given time and cost framework, it should obviously be up to the SMP leader and his or her team to make the quality "movable." Even if the customer signals that the quality must not be lower than a certain minimum standard as a precondition, this can also give the project an exciting degree of freedom while at the same time giving the project participants the opportunity to do "*better than expected*," which is a very good motivational signal. As an alternative, other corners can be made more flexible such as time, or we are given an upper, more spacious limit on how much money or other resources we will have the opportunity to use.

Among the many opportunities that exist to measure SMP achievements along the way, the following two main methods will be presented:

1. Balanced Scorecard (BSC)[27] or Multiple Progression Analyses
2. Earned Value Analyses

For SMPs, a simple variation of a "Balanced Scorecard" can be a good way to measure real project development along the way to their goals. This method does not differ much from normal deviation control in larger projects. The difference lies in the *visualization*. The purpose of deviation control is to compare the obtained results with the planned results at specific times. In large and complex projects, it is often the work done and the costs that are the only parameters that are continually measured against each other. In practice, budgeted costs are compared with actual costs at certain points in time.

This can be done in the form of a *simple spider web or pie chart* such as those shown later in Paragraph 11.3.

The biggest problem in task execution is normally that the people who are allocated to the project are not available. This is because the personal obligations in SMPs are often far lower than for larger projects. Not only do key people fail to meet or deliver as planned and agreed, but the replacements sent are often young and inexperienced or not very up to date on the project. The reason for this is that key people are often allocated to many SMPs at the same time. Since they are talented, they are needed in many places as problem solvers, steering committee representatives and for professional meetings, or it could be that they are part-time participants in many other projects. If our project is perceived as having a lower priority than other urgent tasks, our SMP will lose. No one can be in several locations at the same time.

The result is that the project manager must perform tasks other people were originally supposed to do in addition to the tasks already imposed according to various plans and agreements. Many of these other tasks are not even planned such as extra reports, urgent meetings with management or the customer, personnel problems, unexpected travels or extra control measures.

The project leader must constantly evaluate what the deviations can result in and how to deal with them. As previously mentioned, we do not need to sit in meetings to do work or follow up, and we do not even need to sit in our own office. Many tasks can be done virtually via the Internet and mobile telephones.[28] Many forms of unexpected deviations can be handled on very short notice if updating is done immediately. Such typical deviations are:

1. Delays due to uncertainty and "noise";
2. Delays in access to important information;
3. Larger workloads than expected on key activities;
4. Inefficiency in the way work is carried out;
5. The use of other and less qualified people than originally planned;
6. Decision inertia at the higher levels;
7. Decision refusal in general.

The same applies to reactions to positive deviations such as:

1. Higher levels have accelerated simpler and faster execution of work tasks.
2. Time estimates on activities have been too pessimistic.
3. The learning process has gone more quickly than expected.
4. Motivation and work performance have been better than expected.

There is also a good rule that comparisons between plans and real execution should be listed as "better" or "worse," not "higher" or "lower." This will help simplify the mental link between income figures in which negative numbers are bad, and cost figures, in which negative numbers are good.[29] Projects should also be careful about not asking how "far" an employee has come in executing a job. "Almost done" and "more than half" are ambiguous messages. It is better to ask if the job has been completed or not. If the answer is "no," we should ask how much remains to be done. And never forget that even if it is time overruns that are recognized first, it is cost overruns that will receive the most criticism afterwards.[30]

Nevertheless, it is the project leader's responsibility to evaluate the need for follow-up and find solutions when the schedule fails not only for ourself, but for all of the project's key employees. That is why leading SMPs is so difficult, but also so challenging at the same time.

11.3   Conclusions about Stepstone # 11

To investigate the technical progress of an SMP's progress, we should use Stepstone # 11 and preferably accept a total score of 40 or higher. As for Stepstone # 10, it can be used several times during a project's execution.

It is especially important in terms of motivation and communication to be aware that:

Good motivation relies on all of a project's participants being enthusiastic about the project's technical goals and agreeing that technical progress contributes to a good goal fulfillment.

Good communication presupposes that the project leader ensures that all structural information is functioning properly.

11.4   Stepstone # 11 Used on the Conference SMP

In SMPs, many parameters can be interesting to measure. Most of them can be effectuated in the form of very simple spider web or pie charts.

11.4.1   Balanced Scorecard or Multiple Progression Analyses

When we use a multiple progression analysis for our conference SMP, the following parameters can be interesting to follow up in Period 2 as compared to Period 3:

- The number of speakers already engaged;
- The number of conference participants already registered;
- The number of stands already registered;
- The number of brochures already printed and distributed;
- The direct costs already incurred;
- Costs we have already committed to.

We assume that we will not have too many speakers, preferably 10, though a minimum of one. The more conference participants we have however the better and we would like to have 100 if possible. On the other hand, we can run the conference with as few as 20. If we get five companies to buy stands we will be very happy, but we could also run the conference without stands. It is important to have many brochures, and we assume that 400 should be enough. The conference could be implemented without a proliferation of brochures if the cost for printing them should be prohibitive. The direct costs are also an important limiting factor, and we have targeted 200 Euros in our budget as we pass Milestone P1. If we can withhold some of it (perhaps half) that would improve our liquidity.

The actual situation after Period 2, P1, can be illustrated as shown below in Table 4.1:

	Speakers	Participants	Stands	Brochures	Costs	Committed
Desired	10	100	5	400	2000	2000
Minimum	1	20	1	0	1000	1000
Reality	2	30	4	200	1800	1500

The same table can be shown as a *spider web illustration* for a multiple analysis progression or BSC as shown below in Figure 4.6:

Figure 4.6 – Balanced Scorecard or Multiple Progression Analyses for our conference SMP at Milestone P1

At the end of Period 2 we have managed to confirm two speakers, 30 participants, four stands and have already sent out 200 brochures. The costs are under control, as we have not disbursed or committed to more than we should. Everything looks good, but the visible presentation for the "number of participants" is a cause for concern.

Our next point of measurement is after Period 3, which is shown below in Table 4.2:

	Speakers	Participants	Stands	Brochures	Costs	Committed
Desired	10	100	5	400	2000	2000
Minimum	1	20	1	0	1000	1000
Reality	8	73	5	375	1900	2000

Now that we have obtained nearly all the speakers we had in mind, the number of registered participants has increased to more than 70 and we have managed to send out 275 brochures. We have not been able to procure any more stands, we have used up almost all of the budgeted funds and we have paid our committed expenses down to the last cent. The spider web is now as shown in Figure 4.7:

Figure 4.7 – Balanced Scorecard or Multiple Progression Analyses of our conference SMP at Milestone P3

Both visual and numerical information indicates that the project has developed quite well. The number of participants is somewhat less than the desired amount, and we have not completely succeeded with the brochure mailing. The interesting thing of course will be whether we manage to complete our spider web at the end of the next period (Period 4), and so on.

11.4.2   Earned Value

Earned Value has become another interesting way of measuring an SMP's progress. By multiplying planned progress and planned costs times the real progress and real costs, we can calculate a Critical Index (CI) that can be used as a signal for necessary or potential actions to take.[31] The formula for the CI is:

$$Critical\ Index\ (Cl) = \frac{Planned\ \cos ts}{Planned\ progress} \times \frac{Earned\ Value}{Actual\ \cos ts}$$

Used on the conference SMP, we start with Table 4.3 which shows the planned costs in Euros and planned progress as a percentage of the total progress, i.e. 100%:

Periods	1	2	3	4	5	6	7	8	9
Planned Costs	0	200	700	1,200	1,900	4,300	7,800	9,800	10,000
Planned Progress in %	8	38	46	59	69	75	83	92	100
Milestone C1: Start	100	100	100	100	100	100	100	100	100
Milestone P1: Premises decided	0	100	100	100	100	100	100	100	100
Milestone R1: Stands decided	0	100	100	100	100	100	100	100	100
Milestone C2: Speakers decided	0	100	100	100	100	100	100	100	100
Milestone M1: Brochures made	0	0	50	100	100	100	100	100	100
Milestone M2: Brochures distributed	0	0	0	50	100	100	100	100	100
Milestone P2: Premises planned	0	0	0	0	50	100	100	100	100
Milestone R2: Participants registrated	0	20	40	60	80	100	100	100	100
Milestone P3: Catering decided	0	0	0	0	0	0	100	100	100
Milestone R3: Info-material finished	0	33	67	100	100	100	100	100	100
Milestone C3: Conference held	0	0	0	0	0	0	0	100	100
Milestone M3: Evaluation finished	0	0	0	0	0	0	0	0	100

Table 4.3 – Planned costs and planned progress for the conference SMP

"The planned costs" have already been estimated in Figure 3.10 in Volume I, and the "Planned progress per period" can be found in the Milestone Chart shown earlier in Figure 3.9 in Volume I. The numbers in the table above represent accordingly the planned percentage of completion until the next milestone. It is made in linear assumptions between the milestones, e.g. that half of the brochures, 50%, will be completed before the end of Period 3, while the rest is supposed to be finished, 100%, at the end of Period 4 when Milestone M2 "Brochures made" is passed.

"Planned progress in %" is the accumulated total percentage of work planned to be completed per period in relation to the total amount of work it will take to complete the entire project. This figure is arrived at by totaling all the percentages planned and carried out and calculating the average amount carried out.

In Table 4.4, the real progress is presented. The table is calculated for the entire project to demonstrate how this project could have developed. Compared with the method of Multiple Progression Analysis, the illustration is only relevant up to Period 3:

Periods	1	2	3	4	5	6	7	8	9
Actual Costs	0	150	600	1,500	3,000	5,000	8,000	11,000	12,000
Actual Progress in %	8	34	48	62	74	80	85	94	98
Milestone C1: Start	100	100	100	100	100	100	100	100	100
Milestone P1: Premises decided	0	100	100	100	100	100	100	100	100
Milestone R1: Stands decided	0	80	80	80	100	100	100	100	100
Milestone C2: Speakers decided	0	25	80	80	100	100	100	100	100
Milestone M1: Brochures made	0	25	69	100	100	100	100	100	100
Milestone M2: Brochures distributed	0	0	0	50	100	100	100	100	100
Milestone P2: Premises planned	0	0	0	20	50	100	100	100	100
Milestone R2: Participants registrated	0	30	73	80	85	110	120	125	125
Milestone P3: Catering decided	0	0	0	0	25	75	100	100	100
Milestone R3: Info-material finished	0	50	50	80	80	80	100	100	100
Milestone C3: Conference held	0	0	0	0	0	0	0	100	100
Milestone M3: Evaluation finished	0	0	0	0	0	0	0	0	50

Table 4.4 – Actual costs and actual progress of the conference SMP

As shown, the real costs and real progress are different from those planned.

At the end of Period 2, the real progress is only 34%, while the planned progress was 38% (Table 4.3). But at the same time, we have not spent more than 150 Euros compared with the planned 200 Euros. Although both the costs and amount of work are lower than planned, this does not sound good. On the other hand, it may be that the work performed was less expensive than planned, in which case the real situation is not that bad.

To better interpret this development, the Critical Index can be used. From the formula on page 42 we get:

$$Critical\ Index\ (CI) = \frac{2,000}{38\%}\ x\ \frac{34\%}{1,500} = 1.19$$

Since CI> 1 it means that we are actually working more cheaply than expected or planned up to the completion of Period 2! Although the project seems to be behind schedule, the work productivity must have been high since we have used less money than expected. Perhaps this is not the case or perhaps our productivity compared to costs is not good enough? Moreover, what consequences can this imbalance mean for the entire development of our SMP?

In Figure 4.7 below, the CI index is calculated for all project periods. In reality, this can obviously not be done until the full project is completed, but to exemplify successive interpretations the calculated figures for the CI based on Tables 4.3 and 4.4 are presented here:

Figure 4.7 – The development of the Critical Index (CI) over the full conference SMP's nine periods (bottom numbers)

In the figure, the assumed CI-curve for the development of the entire SMP is plotted. The statements in the chart are intended as *signals* to the project manager. As stated, the project manager should carefully consider the consequences of a Critical Index of 1.19, which is very close to the signal, "Consider a closer inspection," of the project. Such an analysis will probably confirm that the project has good productivity, but the progress in terms of time is somewhat weak. Even so, since the signal is still that the project is probably developing normally, we should not involve ourselves in any further inspection, at least for now. Since the CI decreased to 1.07 at Period 3, this seems to have been a sensible decision. The problem comes after Period 4, where the CI is 0.68 and the signal is, "Investigate closer without delay!" An analysis confirms that the project has spent 1,500 Euros compared to the planned 1,200 Euros. At the same time, the completion percentage is only 62% compared to the planned 68%. Both the number of participants and the production of brochures are behind schedule. The project is using too much money and producing too little revenue. The good news is that after this reminder, the project development improved and after Period 7 the project is completely back on track. Nevertheless, the project ends with a CI of only 0.82, primarily because the post-evaluation has not been satisfactorily done within the allotted time frame of the project.

Stepstone # 11:   Daily SMP Technical Activity

The degree of agreement:	Very little 1	2	Medium 3	4	Very much 5

1   To which degree up to this point in time has the project kept its **time schedule** or operated within an agreed upon adjusted time schedule?

2   To which degree up to this point in time has the project kept its **budget** or an agreed upon adjusted budget?

3   To which degree up to this point in time has the project kept its desired **quality** standard or an agreed upon adjusted quality standard?

4   To which degree up to this point in time has the project team the professional technical **competence** one has expected?

5   To which degree up to this point in time has all the expertise the project planned to use been **available** when needed?

6   To which degree up to this point in time have minor deviations in the central project parameters o f time and cost been exposed to appropriate **consequence analyses?**

7   To which degree up to this point in time have **outcomes of consequence analyses** been discussed and professionally dealt with?

8   To which degree up to this point in time have project superiors such as Steering Committees, the project owner or Top Management **involved** themselves in the project in a proactive manner on major financial and technical problems?

9   To which degree up to this point in time has the Project Leader had full knowledge of all project **commitments?**

10   To which degree up to this point in time is the Project Leader personally **satisfied** with the project's progress?

Total Score:

Stepstone # 12: The Daily Social Performance in SMPs

12.1   Theoretical Reflections behind the Statements in Stepstone # 12

According to current research into new models and a rethinking of the project concept, it seems to be commonly agreed that today's projects should be seen as much as a set of social processes as opposed to only instrumental processes; value creation should be the focus rather than product creation and project managers should be regarded as reflective practitioners rather than trained technicians. These trends also imply an increased interest in how decisions are made that is of equal importance to how well activities are performed. Decisions are made by people, and can be defined as irrevocable transitions from one state to another. If a decision can be recalled, it is theoretically not a decision, but rather a meaningful utterance. Decisions are serious choices. Even the small, daily decisions. As has also been contended by current research, an equilibrium between reason and emotion is perhaps the best way to make any decisions.[32]

In theory, there are two types of decisions in projects:

  a) Decisions made in meetings at project milestones.
  b) Daily, ad hoc decisions that must be made using impulse[33] both within and outside meetings.

It has been demonstrated that the most important decisions in projects are made in the earliest phases of a project.[34] The paradox is that at this point in time, knowledge is at its least. As a result, the project's early milestones must receive special attention with respect to problem clarification, alternatives, consequences and options.

As a project progresses, the social character of the decisions changes. For this reason, it will then be the same as for the task-oriented conclusions: There is a gap between where one is and where one should be that forms the decision support. If one is "à jour", the situation is straightforward and one should persevere without modifications. If one is behind the plan, one must discuss what the cause of the deviation is and what options can either bring us up to date with the plan again or what one can do in order to change the plan since it cannot be followed anymore. But then one must also consider how serious the *social consequences* would be if the plan was changed. For example, if changes require extensive effort, or if it means that the project will take a considerably longer time or even fail to achieve the quality requirements originally agreed on, one must discuss whether changing the plan is really worthwhile. An alternative could just be to stop the project there and then. If one is ahead of schedule, the situation is obviously far more pleasant. But if the gap is large, one should consider modifying the plan so that it better matches the project team's actual capacity and expertise.

Alternatives can also be difficult to identify on short notice. "*The Garbage Can Theory*" (ref. Volume I) points out just how common it is for managers to choose by chance under pressure because they do not have the opportunity to delve more deeply into their options. The consequences are equally unclear. The most obvious consequences can be easy to spot, but long-term consequences as well as unfortunate and spreading economic consequences are far more difficult to assess. Consequently, the choices may not be the best, although they will certainly not be dramatically bad. In theory, this is called "*bounded rationality*," which is grounded in the known limited human capacity to act rationally when your decision support material is imperfect.[35]

As a leader one has to be both *transactional*, which means using cognitive roles and *transformational*, which means using collective roles in order to master project situations. The first role is best performed by delegating, i.e. to dare to give away responsibility and authority to subordinates, while at the same time guiding them and limiting their choices. The second role is about using time and effort to motivate in order to achieve good goal achievement. The worst thing is if people do not know what is expected of them. Then the *interpreting syndrome* occurs. One of the most demanding jobs for a leader is to give clear feedback as a result of having observed so much that he or she understands people's reactions and can act in a way that is not too submissive.

12.1.1   Theories on Delegation

A good tool for improving both effective and social project leadership is *delegation*. Both decisions and activities can be delegated to or done in collaboration with the project's key personnel. By doing things this way, you will learn a great deal about decision making in relation to project team decisions from the principle of *empowerment*. An important element in delegation is *trust*. If the project leader does not trust that a subordinate will do the job properly, delegation will not work. According to studies, trust is based on three foundations: calculus, knowledge and identification. *Calculus-based trust* represents a logical calculation that teams will act appropriately because they face sanctions if their actions are not in accordance with expectations. This is a weak form of trust. *Knowledge-based trust* is based on the extent to which we can predict the actions of the team according to the confidence we have in their ability or competence. This form of trust develops over time and is more stable. *Identification-based trust* is based on mutual understanding and the extent to which the team shares the same values and mental models. This form of trust is definitely the most reliable.

But *effective delegation* is not always easy to achieve. First, it assumes that there is a certain amount of people in the project. If the project leader is at the "lowest" level, there will not be many to delegate to. Second, unfortunate delegation can end up with the project leader having to do the work over again, thus making a stressful working situation and an even more stressful day.

As previously mentioned, these types of problems may be rooted in the lack of a satisfactory Cooperation Chart. In this respect, the *NMO model* provides a good indication of how to delegate and to whom.

Figure 4.8 – The NMO Model

The model points to the need for all three circles to be well covered, while also interacting well with each other. Because of this, a prerequisite for successful delegation is that the person receiving the opportunity to be delegated both responsibility and authority has already covered the other two circles as well. That is, to already have a strong *need* for the task or decision and having a *methodology* or method for doing it. Without these two prerequisites, delegation may end poorly. Similar observations are necessary in order for people to continue being motivated, i.e. that they are given the *opportunity to act* according to their motivation and know a *method* for succeeding in the work they are motivated in doing. An additional prerequisite is that people who are given the opportunity to use these new methods are doing so in areas for which they are motivated.

When it is done in the proper way, delegation is an excellent tool for success. In the *knowledge economy*, delegated groups and *teamwork* receive special attention,[36] especially when it comes to small teams.[37, 38] But it is important to be aware of the difference between teamwork and group work. A team is two or more people who commit themselves to working towards a common goal.[39] *Group work* is more non-binding and does not necessarily have any common goals. Thus, it is important that the team is well-informed as early as possible about tasks that require interdependence so that the joint solution also benefits the individual, that they are given the opportunity to come up with solutions on their own, that everyone has access to the same information, that success is measured in a unified way and that any reward applies to the entire team and not to individuals.[40]

12.1.2   Theories on Motivation

Motivation is defined as a process which encourages behavior. In building a *team* with highly professional people, the objective is to change from "pockets of excellence" to "a team of excellence." At the same time, it is important to understand that good team behavior is not something that is created "overnight."[41] One important reason for this is that people have different needs and different levels of motivation. Each individual's personality will also have an effect on their motivation.

Still, research has disclosed some important steps to be aware of when teams transform themselves into highly motivated teams. The so-called "*social curve*" for team motivation identifies several good and bad efficiency stages in general team development,[42] as shown in Figure 4.9:

Figure 4.9 – The "social curve" for motivational team development

The curve illustrates that at the start of a project team members are generally both effective and motivated because they are excited to get started on the project endeavor. But soon one becomes concerned over contradictions and disagreements, and the efficiency becomes negative. Time is not being used to make progress, but rather to try and resolve disputes and reduce frustration. If this fails, there can already be a risk at this stage that the project can stop. Even if one does not give up, there is a risk that the project's efficiency will remain low and sometimes even become negative because when one is more or less frustrated, one uses effort to protect oneself. This is a very demanding step in team development since progress feels like a constant uphill struggle. Here too, the temptation may be great to give up and terminate the work. Providing, however, that one does not gives up, it may turn out that the team members begin to learn from each other and become slowly reassured that the project will bear fruit. After a while, there is a great chance they will work better and better together, will become safer for each other and will enrich each other. They become *aligned team members*, using their efforts to increase the intrinsic meaning and value of their teamwork through their collective identity. For that reason, their efficiency will steadily improve. Rewards will come towards the end of the project in the form of good results, effectiveness and an efficient and pleasant cooperation.

The problem is that when efficiency is at its best, the project is coming to an end. As a result of this, the efficiency decreases because the team feels sorry that the good cooperation is over and the team must be dissolved. This is a serious psychological phenomenon that occurs in most team formations; namely, that the team becomes more and more introverted, glorifies their existence and begins to react aggressively to measures that threaten the team's existence. In order for the frustration to not destroy too much of the efficiency in this phase, it is important that the project makes arrangements for a successful conclusion so that people can make a smooth transition into new, stimulating jobs, and the final product can be delivered in an exemplary manner.

Theory today distinguishes between inner and outer motivation. *Inner motivation* comes from a set of rational factors such as expectancies about the future, goal influence, self-efficacy and irrational factors such as individual needs, individual qualifications and personality. *Outer motivation* is related more to job design, hygiene factors, reinforcements, social justice and organizational culture. Other very influential factors are also age, gender, individual speed of learning and the extent to which a job "appeals to the heart." Studies of what motivates people the most in different phases of a project course, as shown below in Figure 4.10, are based on a combination of inner and outer motivational factors, which can be very helpful when it comes to selecting the appropriate motivational instruments.

Motivational issues	The initiating phase	The planning phase	The execution phase	The concluding phase
To be innovative	Very positive effect	Some positive effect	Some positive effect	Some negative effect
To reach milestones		Very positive effect	Very positive effect	
To correct mistakes			Some negative effect	Some negative effect
To be self-confident		Very positive effect		
To make progress			Very positive effect	Very positive effect
To redo work		Some negative effect		
To use one's own competence		Very positive effect		
To feel confidence from superiors	Very positive effect	Some positive effect		

Figure 4.10 – Dominating motivational factors during a project's life cycle[43]

As stated from previous research, to be allowed to be creative and feel confidence from your superiors means the most for project leaders in the project's initiation phase. In the planning phase, it means a lot to reach milestones and thus achieve concrete results and to feel self-confident and be able to use your own expertise the most. Too much rearranging of plans though can turn out negatively, even if the planning stage is meant to be an experimental phase. In the execution phase, reaching milestones is very important, especially when this is a clear sign of progress. Creativity in this phase in the sense of flexibility is also important, while revising and modifying work that has already been performed has a negative motivational effect. In the termination phase, progress in concluding the project is positive, while continuing change activity and adjustments have a negative effect. Too much creativity is also not good – because the work is now almost complete; therefore, one does not want more creative change initiatives.

In principle, there are three classes of motivational theories.[44] The first type is concerned with what was motivating for the individual in the *past*. Here, we find the traditional *factor theories*. They are based on what has affected us so far in life and make us react the way we do in similar, recognizable situations. The second type of theory is concerned with what happens in the *present*. Here, we find the *process theories*. The third type focuses on the *future* and on our expectations and desires. Goal theories clearly belong here.

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In projects, it is important to understand that it is when all three classes of theories are working at the same time that the chance for high motivation is at its greatest. This implies three important tasks for project leader to concentrate on:

1. Examining key employees' backgrounds to better obtain what facilitates good motivational measures for them in the current project.
2. Finding out what motivates employees when the project is running.
3. Finding out how goals and objectives must be communicated so that they have a positive effect on the employees with regard to the future.

Still, motivation is not an easy matter. People are generally more irrational than rational. On top of that comes motivation from the inside; no one can be forced to be motivated. Motivation is a personal matter.[45] Project leaders should avoid trying to motivate others based on their own opinions and needs. Good communication can be crucial in this respect. As a rule, it is improper to restrict information only to those "who need it." Good and early information eliminates many of the unsafe elements of upcoming changes. To discuss and consult is almost always better than telling and giving orders, even when there is little to tell. Complicated and complex work conditions increase the degree of uncertainty and lower the degree of motivation. Informal social structures are therefore an important part of motivational and organizational life.

Despite the fact that there are still leaders in our culture who violate all the rules of good leadership[46] and still keep their jobs because they are in a position of great power and are tacitly supported by management colleagues, should modern project leaders seek a project leadership form that prevents the misuse of power, including self-glorification and the humiliation of others?[47] Also, one can never gain professional respect if one's personal integrity is damaged. The negative effects of destructive and unethical[48] leadership have gradually been recognized in organizations and companies that previously thought the employment of cynical, power obsessed "table cleaners" was the best means for success.

When it comes to concluding project work, there could be many reasons for not doing so. First, any project has a "*point-of-no-return*" where it will be difficult to argue for the project's stoppage even if the criteria for doing so have been fulfilled. But if a project is planned to take one year and there are only a few days left to completion, it will be hard to argue against the project just as well being completed, at least as a learning process. In fact, there is always something to learn from a project, even when they fail (perhaps the most can be learned from those types of projects)! But what if there are a few weeks before the completion date? What if it is a couple of few months? There can be many interesting calculations made around this problem. The important thing will be what *alternative use* can made from the project's resources, although to make these new calculations is normally outside a project leader's mandate. However, what will be required to complete the project in spite of the ordered shutdown will always be a project leader's responsibility to answer.

Another factor that influences the choice of a project's continuation is the so-called "*sunk cost*" consideration. The principle of such calculations is that if a project is stopped before it is completed, will the accrued costs nonetheless become lost resources? It can therefore be enough to check what it will cost to complete compared with what the project will create if it is not completed. In reality, one creates a new benefit-cost estimate in which the costs are significantly reduced. Obviously, this increases the chance for the project to become a positive investment and continue. Yet, this is a somewhat fictitious calculation since it makes any project more and more profitable as it gets closer to its target no matter how much it has cost so far. Hence, sunk cost calculations must always be compared with total cost calculations so alternatives for continuing the project are presented to the project's higher-level decision makers.[49]

What is clear is that the more the project is approaching its completion date, the more the staff begins to be concerned with their "life after the project." We can see this as a parallel to job change in companies, where it is said that "the one who is going to leave has already left." Often, the most skilled are the ones who disappear first. Because they are talented, they are needed in new, more important jobs. The result is that the less experienced or those not so competent must perform the often difficult job of collecting the threads, doing the documentation and presenting the project's results.

Another problem is when people have not been informed as to when the project has officially been ended. The fact that a final report has been written and approved, for example, is the official end of the project, while the participants are expecting a follow-up project and regard this as a natural part of the project. The reason for this may be that the project team has no clear indication that the project's work is over; therefore, it is the project leader's responsibility to convey all of this.

One must also be aware that projects can be "terminated" before their completion. Among other things, the reasons for this can be inefficiency and poor motivation. But it can also be a matter of priority from senior management or the customer, or that the end product has been found to be less necessary, or that a force majeure has occurred or simply that the Core Team members are overworked and *burned out*. This is especially true today, when many people belong to the "double-income, no-sex" group, i.e. a couple with two careers that compete with each other.[50, 51] Although it is well-known that many perform better under pressure, this only applies up to a certain point.[52] Pressure from effectiveness and efficiency follow each other as shown in Figure 4.11:

Figure 4.11 – The Yerkes-Dodson effectivity versus pressure curve[53]

Normally, it is so that when efficiency pressure increases, it will often lead to greater efforts. Pressure stimulates zeal and enthusiasm, the so-called "positive" or "warm" stress.[54] But when the requirements increase more than it is possible to manage, efficiency decreases due to increasing frustration and "negative" or "cold" stress, finally ending in pure burnout.[55] The result is that job satisfaction disappears and people feel that they have "completed" their part of the work.[56] If this happens to many of the staff, the project will become psychologically "completed."

12.2   Practical Reflections behind the Statements in Stepstone # 12

Even though the project leader is the project's daily decision maker, the project leader is dependent on decisions at many other levels, as some decisions are made at a level higher than that of the project leader. These are decisions made by management groups, clients or other persons with a higher authority. Unfortunately, a bad project progress may well be due to bad decisions at these levels. Late decisions, unclear decisions, contradictory decisions or an outright lack of decisions are typical. Yet it is the project leader's responsibility to work for high level decisions to be made, but "upwards" the project leader has no authority and cannot use "force." Instead, the project leader must use *influence*. And the best way to acquire influence is to produce good *decision support* material. This can be done by informing your staff/team members about the consequences of poor decisions or the lack of decisions, suggesting partial decisions or suggesting an adjustment in the level of ambition. The possibilities are many, and superior authorities will often be grateful for such help in order for them to make better decisions.

Many of the most important decisions and sources of motivation in SMPs take place in *project meetings*. Meetings define work groups and teams, and enhance cooperation and present an overview. Meetings improve the common effect of decisions that have been made. In fact, a meeting is one of the few situations in which project staff works together as a team and can make team decisions. In addition, meetings are status symbols that will also always produce a learning effect whether the meeting is successful or not. Good meeting rules for SMPs are:

1. To plan well in both content and equipment, thereby saving meeting time;
2. To be careful with the invitation notice;
3. To start on time;
4. To set the course and control the discussion;
5. To extract the main points and take care of the conclusions;
6. To stop on time.

For the project leader, there are many important decisions that must be made within this process. In theory, one distinguishes between programmed and non-programmed decisions.[57]

The first decisions can be formulated by decision-making rules, and on the basis of these, you select the best decision. Often, such decisions are called *routine decisions*. These can be modeled and even done by computers in the form of *decision-making systems*.

The second type of decision is those in which people choose from the information that exists and where the rules are not so precise. In SMPs, these types of decisions are the most common and are best suited for meetings because either the problem is so new and different that it is not possible to use existing rules, or because time is so limited that there is not enough time for a more thorough evaluation. At that point, we do not need decision systems, but rather *decision support systems*. Here, it is often the ability to act that is far more important than having a formal education. According to recent observations[58] there are four important megatrends that will affect team decisions: The first is *talent shortage* in the sense that demographic changes in the economically active part of the population, and the fast developments in technology will require other forms of knowledge, and the service economy are gaining ground rather than procedural activities. The other is *individual choice*, in the sense that the upcoming generation has very different requirements and expectations of individuality in professional life than those employees who are closer to retirement. At the same time they cannot avoid working together in order to succeed. A third trend is more *demanding customers*. Customer freedom increases, especially in the international market place. Customers also require more transparency and direct impact on projects, and require certified skills. The *technological revolution* is a trend by itself. Technology requires coordination and cooperation, while the total mobility means that we can work independently of time and place, also as a team.

In practice, there seems to be five factors that create problems when teams decide in meetings. They are:

1. Problems with mastering time;
2. Disagreement on the best solution;
3. Disagreement on the risks;
4. Cross interests;
5. Different meanings.

Team decisions tend to take a longer time and are therefore more expensive than individual decisions. On the other hand, team decisions will usually be more effective. A team decision in which agreement is obtained and implementation is fast can save a significant amount of time in the long run. Skilled project leaders must weigh these factors against each other to ensure that the efficiency is high, and discussions and solutions concentrate on what is most important.

The myriad of ideas that often comes up in teams helps to sharpen creativity and enthusiasm, but can also lead to resistance, discontent and emotional strain. Skilled project managers use disagreement as a constructive means for generating new, creative opportunities. "Both ideas are good, is it possible to find a solution that includes both?" When disagreements lead to personal attack, it is the project leader's responsibility to stop this as quickly as possible.

There is a common assumption that teams are more "conservative" than individuals. Studies, however, have demonstrated that in certain situations teams are more willing to take risks than individuals. For example, an individual gives priority to a secure job rather than to bet on an uncertain, but probably more profitable job somewhere else. A team will often take the opposite stance.

Team members often disagree about solutions because they have different point of views and different opinions about the goal. As mentioned above, a team can be commissioned to improve the profitability of a product. The sales manager sees it as being crucial to move into a new market and conducts a more aggressive marketing campaign. The financial manager's opinion is that the costs have gone completely out of control and proposes consolidation and cost cutting measures. In cases like this, the project leader must organize the work so that the goals and constraints are discussed before any solutions are suggested.

Seldom, if ever, do all team members start with the same possible solution to a given problem. To achieve a full agreement may well imply that some have had to "give in." But if those who have the most creative ideas must give ground, the team ends up with a mediocre solution. In contrast, if the most creative members win, the team may end up with an overly bold and unenforceable solution. For that reason, the project manager must ensure that solutions are properly tested against each other before being accepted. A good idea is to change the angle of attack by asking the team how to get around an obstacle, rather than just looking at it as a blockage.

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The purpose of changing the attack angle as mentioned above is not necessarily to find the optimum solution, but to obtain a *consensus*. A consensus means finding a solution the entire team can accept without everyone necessarily being completely happy with it. To achieve a consensus, it is preferable that all the ideas, perceptions and feelings individual members have be taken into account, not just those that a few argue for. Therefore, it often takes time to achieve a consensus as well as insight into problem solving and the ability to lead discussions. Still, the time invested can yield a good payback in the long term since a solution which has been accepted means faster implementation and will dampen critics.

A particular problem arises when the team leader, that is the project leader, leaves the project. This can be due to incompetence, although it is more commonly the opposite. The project leader has proven talent and skill and management suddenly decides to move him or her to another project as a "bus boy," or the project leader has simply been offered a better job somewhere else and chooses to quit. The result for the project is usually not good. New project leaders must familiarize themselves not only with the project, but also with the mindset of the previous project leader. To know how others think is a major psychological challenge, and the transition from one leader to another ends with frustration, accusations and a loss of time.[59] The solution is to allow new project leaders the opportunity to "restart" the project from an earlier milestone.

Compared to large and complex projects, the procedures for control and follow-up are the same for SMPs, at least in principle. In SMPs, you must make many quick decisions because unexpected problems can emerge. Illness, accidents, bad weather and open or hidden conflicts between employees or stakeholders may well occur. At that point, it may be difficult to find out what has caused the problem. If a delivery is late, it may be due to poor work by the supplier, although it can also be due to misunderstandings or unrealistic demands imposed upon the provider. Perhaps one has used their position of power to demand something that in reality was impossible to deliver? Or delays are perhaps caused by hidden conflicts one is not aware of? The advantage of everyday decisions, however, is that they generally only bind resources for a shorter period of time, thereby avoiding solutions that despite the fact that they are accurate and comprehensive, can bind resources for a long period of time and cannot be reversed.

When it comes to the identification of options in the progress of SMPs, we should, as we similarly would do when looking for ways to resolve conflicts, search for ways that do not unnecessarily drain the project's energy. A good idea is to use so-called *creative solution methods*. Such methods have gradually become a major added-value possibility for SMPs as well. The brain's incredible capacity can be engaged in many different areas, and the methods and techniques to make use of this resource are plentiful in today's world. In large projects, it is recommended to use increasingly sophisticated creative methods as an aid in all phases of a project. The disadvantage though of these methods is that they often take longer time than expected, and the volume of alternatives is so numerous that progress can come to a halt. For SMPs, the use of far simpler "gut feeling" methods is recommended. A technique that both saves time and is engaging is the "Matched Pair" method, which is demonstrated in the conference project below. This method is based on a simple but practical "rule of thumb" that the human brain seems to have difficulty comparing many things at the same time, but is quite good when the choice is only between two alternatives.

Finally, we must never forget that a leader will also appear as an example for others – and first and foremost – for his or her's own staff.[60] If possible, you should always try to obtain feedback from your staff as to what type of leader they regard you to be. Take subordinates aside and ask questions such as: How do I come across? Do I command respect? Do I communicate well? Do I make good decisions? Often, it is only in our everyday work that we have this opportunity. Some good "rules of thumb" are:

1. Good leaders are in their office or on the project site at least as early in the morning as the rest of their team.
2. Good leaders should not start the day by reading a newspaper if they do not want the rest of their staff to do so.
3. Good leaders should do the most difficult and boring tasks first.
4. Good leaders show that they like challenges by the way they use their body language.
5. Good leaders should never forget to be good listeners in addition to being good talkers.
6. Good leaders are vigilant and generous towards skilled excellence.
7. Good leaders do not prioritize phone calls (especially mobile phones!) in front of visitors.
8. Good leaders do their best to finish the day at the formal office time.
9. Good leaders do not take too much work home with them.
10. Good leaders dare to be themselves!

If it is necessary to perform an accurate and prompt follow-up because a project can take place in a turbulent and changing environment, it may well be necessary to have even closer inspections. One such system is "Scrum," which is an agile method that has become more and more popular in modern ICT project developments. This technique is shown in Appendix B: Stepstone # 17 "Agile Project Control". The purpose of this system is to monitor a project in minute detail in the very critical stages of its development and take immediate response actions if necessary to ensure high quality project results.

In addition, there are the problems of *risk* and *uncertainty*. Since all project work faces an unknown future, we can never be 100% sure things will develop as desired. In theory, there are three good reasons for this uncertainty:

1. We do not have enough information to *understand* the situation.
2. We do not have good enough knowledge to *interpret* the information we have.
3. For various reasons, we are unable to *control* the situation.

If the *uncertainty* is large and can lead to injury, it is called *risk*. Theoretically, we separate uncertainty from risk by defining uncertainty as psychological doubt and risk as the measurement of the size of the uncertainty on a scale that is mutually accepted. In reality, this means that uncertainty is generally associated with individual perceptions, while the size of the risk is something that more than one person has to agree on.

In projects, it will always be sensible to consider the risks that may occur as the project evolves, though not all risks are dangerous. Because of this, one should consider what measures need to be taken in different situations that may arise so that measures are designed to match the degree of hazard. (See Appendix C for more details, if appropriate).

12.3   Conclusions about Stepstone # 12

Enthusiastic employees deliver better results. They are more willing to go the extra mile when the going gets tough. Because of this, every leader should focus on making their workers more passionate. Dealing with under performers requires a high level of emotional intelligence. Having analyzed the nature of a performance's shortfall, we should ask the individual concerned to suggest solutions. Listen carefully. Show empathy. Clarify expectations. Ask open-ended, non-direct types of questions. Make sympathetic, non-prescriptive, non-judgmental remarks. Either we do it on an individual basis, or we call meetings. The following five tips can help:

1. *Show your passion in a positive way*. It is difficult to inspire others and make them feel enthusiastic if we do not believe in the project ourselves. There is no harm in showing your feelings. People will suspect that a leader with an iron face is not very interested in the work tasks they are doing.
2. *Be positive*. It will inspire people and challenge them to perform their best when we as leaders show enthusiasm and passion about a project.
3. *Be honest*. Do not be afraid to point out something if it is not working. Focus on how to solve the problem in a positive and realistic way, and remember to keep your promises!
4. *Believe in people and their skills*. Set high expectations and explain why you believe in them. Self-belief and a positive work environment create more dedicated employees. Never forget that people need praise when they have done a good job.
5. *Accept that both informal and formal communication are equally valuable*. Provide comfortable areas or corners where staff can meet and chat on an informal basis. And by all means, be a good listener, not only a good talker!

To check whether our conference SMP is developing in a good way, we use Stepstone # 12: "The Daily Social Performance in SMPs." As with Stepstone # 11, it can be an advantage to use it several times during a project's execution.

As for the important issues of motivation and communication related to this Stepstone, we should be aware that:

> Good motivation relies on all project participants being enthusiastic about the project's social goals and agreeing that social progress contributes to good goal fulfillment.

> Good social communication presupposes that the project leader will ensure that all cultural information is functioning properly.

12.4   Stepstone # 12 Used on the Conference SMP

As a good way to start, we could for instance delegate the AoR "Conference Program" to a project Core Team member, knowing that self-actualization through personal involvement is perhaps the highest level of human achievement. With reference to the NMO model (page 132), that requires three very important conditions to be taken into account:

1. That the member fully understands and agrees with the need for this conference.
2. That the member has good skills when it comes to developing conference events.
3. That the member is given the opportunity to develop the program in his or her own way without interference from the project leader if the employee so desires.

If the member only meets two of these requirements, the delegation should probably not be done.

If, for instance, the member understands both the need for and is a skilled conference facilitator but is consistently prevented from doing so in a way he or she wants, the result can be frustration, demotivation and discouragement.

If the member understands the need for and is given the full opportunity to do it on his or her own terms but lacks enough skill, the result can be a lot of effort with little efficiency because the job is performed in a cumbersome, hesitant manner with a great chance for error.

If the member is both an accomplished conference facilitator and is given the chance to do it his or her way but does not understand why the conference is so important, the task can be done, but more as a duty and without the necessary determination and enthusiasm, particularly when problems arise.

The point of delegating the conference project is to first examine whether our subordinate has a genuine, personal desire to be responsible for the job, fully understands what needs to be done and is reasonably skilled in the field so that too many errors, misunderstandings and inefficiency are avoided. A good rule is not to delegate only routine and unrewarding tasks, but also position ourselves so that we can confidently delegate demanding, arduous and complex tasks. And when tasks are demanding, we shall always monitor and provide quality feedback. We must remember that it is wise to use the "we" form and not the "you" form when errors and mistakes are corrected. It should not be "what can you do about it?", but rather "what can we do about it"? In addition, do not forget that it strengthens our position as a project leader if we occasionally take part in mundane jobs such as cleaning the notice board, tidying up the meeting room or even copying the minutes from the last meeting.

If we want to use a more elaborate method of delegating responsibility, we can use the "Matched Pair" method. For example, if we use it within the area, "Physicals," we start by recognizing that the choice depends on several circumstances such as the size of the premises, location, accessibility, the quality of the local technical equipment, the service provided and the "style" of the premises. If we are lucky, the one being delegated the task will find premises that meet all these desires. But if our subordinate is less lucky, he or she has to choose premises that come closest to all our desires. Using the "Matched Pair" method can help him or her out, starting with the matrix shown below in Figure 4.12:

Criteria		1	2	3	4	5	SUM
1.	Size	IIII					4
2.	Location		I				1
3.	Accessability		I	III			4
4.	Technical equipment		I		I		2
5.	Service		I		I	I	3
6.	Style	I					1

Figure 4.12 – The Matched Pair Method used for selecting the best site for the conference SMP

The selection criteria are listed in the left-hand column in a random order sequence. The matrix is made by systematically comparing all criteria with each other. For example, the criterion for the "size" of the premises is first compared with the criterion for its "location." Let us imagine that "size" wins and gets one vote, while "location" receives no votes. In our opinion, is it more important that the site can accommodate all the participants we plan or hope will come than that the location is so attractive. The decision of course is difficult since optimally we want both. But if we have to decide and can only give priority to one of these two criteria, we go for "size." Then we compare "size" with "accessibility," and again we regard "size" as the winner. We believe that we can compensate for poor availability with our own transport if necessary. In the next round "size" wins again, this time over "technical equipment" because we believe that we can perhaps bring good enough equipment ourselves if the premises cannot provide a good enough technical quality. When the criterion of "size" is compared in this way with all five other criteria, "size" has "won" four times and lost once to "style." The latter won the one time because we find that having stylish premises will have the most significant impact on the conference's image.

When criterion no. 1, "size", is now compared with all the other criteria, the next criterion, "location," is compared with all the other criteria except for "size" since that comparison has already been done. "Location" is therefore first compared with "accessability," and "accessibility" wins in our view. Our subjective opinion is that it is better that the conference participants can easily get to the conference site than that the "location" is beautiful but difficult to access.

In this way we keep on comparing, using the "Matched Pair" method until all comparisons are made, a total of 15 comparisons (5+ 4 + 3 + 2 + 1 = 15). In the column on the right, we note how many votes each criterion has gotten. As stated, "size" and "accessibility" have received the most votes (4), while "service" has come in second (3).

Our conclusion after all of this is that when we now start hunting for a suitable premises for the conference, the first and foremost priority will be given to finding a premises large enough to accommodate all of the potential participants, while at the same time making sure that the premises shall be easily accessible. The second priority is that the local service offered is good. In our view, the least important aspect after all is how stylish and beautiful the premises are.

This prioritizing should be done by the person or persons responsible for the AoR "physicals," although the final choice for the premises is the project leader's duty to make (MB) as per our earlier Cooperation Chart (Figure 3.7 in Volume I).

The level of risk is also an important factor in our decision. All projects have some degree of uncertainty, which subsequently makes them risky. In our conference SMP, the easiest way to evaluate the risks is to look at the Milestone Plan (ref. Volume I) as our reference. By looking at each milestone, the project team can try and prevent problems before they happen. All the potential risks are compiled in a simple table as shown below in Table 4.5:

P1	The premises	Will most probably find a suitable place
P2	The plan of the premises	Hardly difficult because plenty of time is allotted for this
P3	The catering	Can be a not so good solution because there are many unreliable catering companies
R1	The stands	Can bring in less income than hoped for, but some stands should be able to be mounted
R2	The participants	Maybe the biggest problem if we cannot attract the right target group
R3	The information material	Hardly problematic, because we have arranged similar conferences before
C1	The start	Top management is behind the conference, so they will not cancel it
C2	The speakers	Can be a flop if we do not attract good speakers
C3	The conference	Depends on Milestone C2, which implies taking a gamble
M1	The brochures	Depends on choosing a not too cheap and unreliable printing company
M2	The distribution	Should be OK
M3	The post-evaluation	Can be downgraded, but is an activity we can control

Table 4.5 – Potential Milestone risks for the conference SMP

In SMPs, it will often be unnecessary to perform more risk analyses than this. Common sense and simple subjective assessments will often be enough to make the right decisions as far as what to do if risky situations should arise. Good SMP leaders are generally good at automatically using their range of *mental models61* in new risk situations. In our conference SMP, it seems that the quality of the speakers is the most risky parameter, together with the number of participants being too low or the wrong target group being addressed.

The consequences are that we should probably put more of an emphasis on discussing and selecting the speakers, and we should make an extra effort when it comes to inviting the participants. To do more risk protection than this at the outset does not seem necessary. But should our conference project go in a completely wrong direction and the damage seriously hurt our image and reputation, it may be necessary to more seriously consider how comprehensive the risks protection we take should be.

Should there be a need for a deeper risk analysis after our reflections on this, Stepstone # 17, "SMP Risk Management," presents a more comprehensive risk analysis.

When our SMP is to organize a conference, it will be natural that the project is not completed until after the post-evaluation is done. This will not only ensure that the conference is held, but that some follow-up of prospective customers is also done after the conference. The latter is more an investigation of future project opportunities, while the first is only that an important milestone in our SMP has been passed.

Stepstone # 12:   Daily SMP Social Performance in SMPs

		Very little		Medium		Very much
	The degree of agreement:	1	2	3	4	5

1   To which degree up to this point in time has the project had a
well functioning **information and communication** system?

2   To which degree up to this point in time has the project solved
internal conflicts if and when they have occured in a way most of those involved have
found satisfactorly?

3   To which degree up to this point in time has the project had
constructive **meetings** providing important and adequate information and communication
between project participants?

4   To which degree up to this point in time have important
decisions been based on well prepared decision support material?

5   To which degree up to this point in time have important
decisions been delegated to the most **skilled people** in the project when appropriate?

6   To which degree up to this point in time has the Project Leader
seen to it that all team members are properly **updated** if and when changes are done in a project
mission, project goal, project plans, project control, and/or the project's TOR?

7   To which degree up to this point in time have **motivational and
behavioral** issues been discussed with key project stakeholders?

8   To which degree up to this point in time have individual and
team creativeness in solving problems and enhancing project development been **honored**
in a proper and encouraging way?

9   To which degree up to this point in time has the Project Leader
encouraged and **rewarded** positive **leadership style** at the subordinate level and similarly
criticized and **punished** ill-judged leadership style at the lower level?

10 To which degree up to this point in time has the Project Leader
been observant when team members demonstrated good **team understanding** and good
team spirit?

Total Score:

Stepstone # 13: The SMP Completion

13.1   Theoretical Reflections behind the Statements in Stepstone # 13

In large projects it is the closure and delivery of the result, concluding with a celebration ceremony, that is often well registered and given great attention. In the literature, this point in time is also referred to as the "*Project Closeout*" or "Project Termination." Because "termination" sounds like the project has become a failure, "project closeout" is a better choice. On the other hand, there can be good reasons for terminating a project before its completion. Perhaps what has been produced so far is good enough, and one does not need to do all the work that was originally planned. Other reasons could be that the technological problems became too big, that organizational factors had too negative influence on progress, that the market situation had changed unfavorably toward the project's end product, that the financing stopped or that the project team was simply unable to spend enough time to complete the job. All these are valid grounds for terminating any project.

The project closure output concerns verifying that the product of the project meets all the necessary requirements and obtains a formal *sign-off* for the acceptance of the product. Formal acceptance also includes distributing notice of the acceptance of the product or service of the project by the stakeholders and customers. When it comes to reporting, documenting formal acceptance is important because it signals the official closure of the project and confirms that the project was completed satisfactorily. In this form, a document for sign-off indicates that the person signing accepts the end product of the project.

The most important thing is the *final report*, which signifies the beginning of the *warranty period*. In addition to a summary of a maximum of one A4 page, there must be something about the project's objective, the implementation compared to the plans, the project's economics, the end product, the end product's profitability, major changes done through the project's execution, learning issues and what the project has resulted in. We should also make recommendations and suggestions about further progress or follow-up projects.

Project reports, including those which have been written during a project's progress if this is decided or felt to be necessary, must always be *customized to the recipient*. The higher the level, the higher the customization. The main message should be restricted to three to five important matters. Charts, drawings and diagrams increase readability. A good idea is to test the report on a colleague before completing it. Use good, understandable language!

A good end rule is to hold an *oral project presentation* to inform all stakeholders that the work has been completed. Important preparation activities are to think about the purpose of the presentation, what the recipient group represents, the assumptions and limitations of the audience, what they will probably be most interested in knowing and what reactions one wants from them. Good rules to follow are:

1. Do not start with an apology.
2. Stay calm and relaxed.
3. Stick to the main message.
4. Build the presentation on its strengths.
5. Remember that monotony is a presenter's worst enemy.
6. Do not look like a statue, but do not be a "jumping man."
7. Be careful of too much spontaneity in your performance.
8. Do not mess things up.
9. Make eye contact with the audience.
10. Talk to, but not at people.

When in front of an audience, never forget that a presentation starts before you take the floor. And never forget that a good speech is a bad article, and vice versa.

As previously mentioned, one should not forget to set aside time to consider the *learning* potential a project may have had. Some key questions in this respect are:

- What *went well*, and what is worth remembering the next time around?
- What should one do *differently* the next time?
- What will easily *confuse* you the next time that you should be more prepared for?
- When did things happen in the project that *changed* the way of working, the project's goal, or perhaps even the project's mission?

One should also be cautious about doing this pedagogical evaluation too soon after the project is completed. In large projects, it is often recommended that such a post-evaluation is done both months and years after the project's termination. This is because it is natural that the effects of a larger project investment will reveal themselves immediately (nor the disclosure of the lack of an effect).

13.2   Practical Reflections behind the Statements in Stepstone # 13

There are also differences between large projects and SMPs in the *conclusion* of a project. In SMPs, the project can suddenly be finished and the participants become engaged in other tasks without actually having been fully informed that the project is over. This can easily cause confusion and uncertainty, and it is not without reason that SMPs are known for the last 5% of the work "approaching infinity."

In practice there are two reasons for an SMP to end:

1. The SMP ends because the goal is reached.
2. The SMP ends without the goal being reached.

There may be several reasons for option # 2:

a) We understand the SMP will not succeed in being completed within its agreed TOR.
b) We understand that even if the SMP reaches its goal, it will not contribute satisfactorily to its mission.
c) For various reasons such as a superior authority, senior management, the steering committee, the client or the user, it is decided that the SMP is not to be completed.

Situation A is perhaps the most common for SMPs. If the workload gradually exceeds our capacity, it is the project leader's responsibility to inform about the situation to his or her superiors, although such information must explained in-depth. If it is because the economic resources are too limited, there must a revised benefit-cost estimate that follows the recommendation to halt the project. If the human resources are not qualified, are lacking or will be missing, this must be explained without hesitation. If it is impossible to meet the deadline for completion, it must be argued which measures are necessary in order to keep the SMP within its time frame.

Situation B is the most difficult to detect. If the SMP's key people are so busy with fulfilling the goal and daily operations, it may well be that they ignore the fact that the external conditions have changed so much that the original target is no longer applicable, or that it should have eventually been obvious that the project's goal no longer supports the project's mission. These are concerns that the project leader must keenly evaluate. Preferably, these reflections should be taken up at certain milestones or in meetings with the SMP's superior authority.

Situation C is not so unusual. Political bodies can change their opinion, or events outside the knowledge of the project team make it necessary to stop the project, no matter how successful it is from a technical and economical standpoint. As has been previously mentioned, project leaders in large, costly and complex projects often use a so-called "force majeure" clause that he or she is entitled to use if the project situation becomes extreme, difficult or even dangerous to try and manage. But in SMPs conditions are usually more informal, and the project leader can negotiate a full stop if he or she feels it is necessary without referring to any specific written agreement.

Much of the *closing procedures* in SMPs will be more or less the same as for large and complex projects. It is very important to provide good information on what, but not necessarily how much of the project has been completed. In any event, the information must be in such a form that it reaches the correct recipients so they can react and make use of it. Therefore, it is a good rule in SMPs that almost every project should have some type of *written final report*. In the midst of planning all the chores in a project it is easy to forget that even in an SMP, report writing and a summary consume time, though it need not be too heavy or academic to serve its purpose. You must remember that a final report is made not only to be stored, for instance for judicial purposes, but that it should preferably be read as well.

And finally, SMPs should also be post-evaluated, although not too far into the future. The normal time should be one to three weeks. At that point, we should have a reasonable perspective on the usability of the SMP results and learn from it in order to use it in our next SMP or larger main project. The point is to let the project get "out of the body," but still conduct the evaluation quickly before we become involved in another project. But a post-evaluation should not be done the same day as we finish a project – SMP teams also need to rest.

13.3   Conclusions about Stepstone # 13

To ensure that SMPs are concluded in a good way, we use Stepstone # 13, "The SMP Completion." This Stepstone should best be used as part of a "closing meeting," or at least serve as input to such a meeting. The purpose here is to assure that all of the participants understand that the project has actually been completed and the project staff released from their responsibilities. It is a good idea to ask your staff how satisfied they have been with your way of leading the project, realizing that this can be a golden opportunity to get honest feedback on your own performance! The same applies to an eventual steering committee and other key players. They may participate in the meeting or be duly informed about the project's closure. Other factors that are natural to discuss are what we have learned, the handing over of the project accounts, the releasing of equipment that has been used, the orienting of suppliers and of course thanking everyone for their contributions and encouraging them to have a dedicated effort for future projects! As always, the criterion for a successful meeting is that the total score is 40 or better.

For good motivation and communication, you must bear the following in mind:

Good motivation relies on reaching the project's goals and deciding on the project participants' subsequent work involvement or aftermath.

Good communication is that a clear message about the project's work being over has been received.

Stepstone # 13:   The SMP Completion

	The degree of agreement:	Very little 1	2	Medium 3	4	Very much 5

1 To which degree has the project been able to deliver the **final product** (system, written report, physical installation or construction) in a proper way?

2 To which degree has the project concluded its completion with a well organized **get together** with all the central project participants present?

3 To which degree has the project's principals (clients, customers, receivers) **reported back** with satisfaction and acceptance of the project's final product (delivered system, written report, physical installation or construction)?

4 To which degree have the fina l **accounts** for the project been audited and delivered accurate financial results in a proper way?

5 To which degree has the project's **organizationbeen** properly dissolved at the goal fulfillment?

6 To which degree have **external stakeholders** been properly informed about the project's completion?

7 To which degree has **experience gained** through the project endeavour been discussed among project participants following the project's completion?

8 To which degree has technical equipment, machinery, office fittings, furniture, etc. been properly **transferred** or disposed of at the project's completion?

9 To which degree have the steering committee, advisory board and other project superiors and supporters been informed about the project's completion and been **thanked** for their contribution?

10 To which degree has a future point for the projec t 's **post-evaluation** been discussed and agreed upon?

Total Score:

13.4   Summary of Chapter 4

In this chapter, three conditions are discussed that particularly concern SMPs:

- How the project is *started.*
- How the project is *executed.*
- How the project is *ended.*

A master model for all three of these conditions is the "six-box" model, which describes how good project leaders take responsibility for both the project's "structure" and its "culture" during the project's execution.

The chapter also demonstrates how the traditional "waterfall model" is built and works, and when and how projects should be concluded are reviewed as well. Different ways of doing things are discussed, in addition to which information and communication style is natural for the project leader and others to engage in. What can normally be extracted as the effects of learning are also discussed.

The chapter concludes with how presentations and reports should be prepared and presented in SMPs.

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14 How to Improve the Chances of SMP Success
Stepstone # 14: Measuring an SMP's Success

14.1   Theoretical Reflections behind the Statements in Stepstone # 14

What makes a project truly successful is a topic that has gotten more and more attention in modern times. Traditionally, project success has been associated with the project being finished and the receiver reporting back that he or she is satisfied.[62] Today, project success is expanded into two areas of success: [63, 64]

    a) Project management success
    b) Project success

Project management success measures how good the project manager has been in achieving a project's goals without exceeding the deadline and budget. This is the traditional scale of success and is common in large, technical projects.[65] With large financial investment costs and significant socio-economic or company related aims, this is natural. In addition, it is important to evaluate whether the *changes* that the project was supposed to create have taken place. In particular, it is worrisome when the technical goal has been reached, but the changes that the project was intended to create only occur to a limited extent or perhaps not at all. In the latter case, it may be necessary to not only assess the changes as such, but also to ensure that the conditions have been structured well enough to improve the chances of the project being successful. Success will then also be the extent to which the project work and its results have influenced the base organization's ability to better cope with project work in the future, including its learning and motivational effects.

A tool for such measurements is the Project Evaluation Scheme (PEVS).[66] This tool is based on both theoretical knowledge about good project management and extensive field observations of real projects. PEVS consists of 70 questions about the project's goal(s), the project's constraints, the project's planning, the project's organizing, the project's management, the project's communication and the project's perceived success. For each question, one marks on a scale from 1 to 6 the extent to which the respondent feels the statement has been fulfilled or the suggested action or behavior has taken place in the project. Having had more than 500 project managers fill in the PEVS form, a database has been established which contains the average values per question. According to research, it tends to be that projects that end with a low success rate very often have a low score in the project's early phases, i.e. during the project's preparation and planning. It is here that we find the project's *success factors*, i.e. the conditions that facilitate success. These factors can be observed and influenced during the implementation of the project. A project's *success criteria* are the measuring sticks we choose for assessing how successful a project is. By using PEVS in several phases of a project's development, one can provide a good picture of what factors that have led to a high or low success rate.

In addition, the results can be used to judge to what degree one's own project has developed for better or worse in comparison to the more than 500 other projects in the database. An extra benefit is that the form can be used to compare and discuss various project Core Team member's opinion on their own project's development success.

14.2 Practical Reflections behind the Statements in Stepstone # 14

Turning to SMPs, this implies that we have two different ways to measure an SMP's success:

1. Measure the degree of *SMP leadership success*
2. Measure the degree of *SMP success*

For SMPs, the 70 PEVS questions will be too extensive, although the last 10 PEVS questions go directly to the heart of a project's perceived success. Whoever fills in the form should grade the level of achievement for each of the 10 success statements from their own personal viewpoint.

14.3 Conclusions about Stepstone # 14

For SMPs, these statements are transformed so they fit the 10 questions constituting Stepstone # 14, "Measuring SMP Success." The questions address three key areas for success:

1. Technical success, questions 1–5;
2. Social success, questions 6–8;
3. Developmental success, questions 9–10.

As with the other Stepstones, the same rule applies: if we have a total score of minimum 40 we can consider the project a success. This Stepstone can also be used advantageously several times during the project because assumed success can also be measured on the way to the final goal.

In terms of motivation and communication, it is particularly important to be aware that:

> Good motivation relies on the opinion that the result has been worth the effort.

> Good communication relies on the project's results being distributed in an appropriate manner.

Stepstone # 14:   Measuring SMP Success

	The degree of agreement:	Very little 1	2	Medium 3	4	Very much 5
1	To which degree has the project finished within its agreed **time schedule?**					
2	To which degree has the project finished within its agreed **financial terms?**					
3	To which degree has the project finished within its agreed **quality standard?**					
4	To which degree through the project work have the project`s participants **learned** to **develop** themselves both socially and technically /professionally?					
5	To which degree after this project may it be assumed that the project`s participants will be even more **motivated** to participate in new project endeavors?					
6	To which degree has **experience gained** through the project endeavor been collected and made easily available for future projects?					
7	To which degree will the project`s final product (system, written report, physical installation or construction) be **implemented** or taken into use in a reasonable amount of time in the future?					
8	To which degree will this project endeavor promote a good **image** in the future for both for the organization(s) behind it and the people who have participated in it?					
9	To which degree has the completion of this project improved the Project Manager`s possibilities for higher level organizational **promotion?**					
10	To which degree may the results of this project serve as significant input for **new,** beneficial projects within your or other`s organizations?					
	Total Score:					

Stepstone # 15: Measuring SMP Support Success

15.1   Theoretical Reflections behind the Statements in Stepstone # 15

A second very important measurement in today's business environment is "project maturity." This means to investigate the base or line organization's skill in providing conditions to ensure that projects will succeed. An often used concept is the base organization's "projectivity."[67, 68] The most common definition of projectivity is a company or organization's ability to achieve its goals through good project support.[69] The more projects an organization has, the more "projective" the organization must be. The more the important activities and problem solving are undertaken as projects, the more an organization must cope with the many requirements necessary for successful project execution and delivery.

This way of evaluating is based on the theory that the development of maturity within an organization begins with adopting the project's form as a ladder of development[70] as shown in Figure 5.1:

Figure 5.1 – The Project Maturity Ladder

The lowest level involves only having *single projects,* and the need on this level is to have professional project management of individual projects. As the number of projects grows, it will be natural to consider whether some projects have a common purpose and can supplement each other. The need is to not only master individual projects, but to master "management by projects." The point is to cluster projects together into *programs* in order to achieve strategies, and project managers of individual projects must have an appropriate knowledge of this strategy in order to make important choices at the project management level. When the number of projects further increases, a mixture of *project portfolios*, project programs and single projects will compete for the same resources. When this happens, project managers must also be knowledgeable about other projects so that the resource fight takes place in a way that benefits the entire organization. The more an organization develops their project skills in this way, the more the organization will be able to direct its processes through the full spectrum of project work in the form of *multiproject activity*.

Today, this ability is called "*professional project maturity.*" When doing so, there is a clear relationship between all project-related efforts, while at the same time the project concept is regarded differently depending on what is the most important aspect to focus on. A brief overview of these options is shown below in Table 5.1. The table suggests how different actions best fit handling these situations.

Characteristics	Projects	Programs	Portfolios
Individual goals	Yes	No	Yes
Goals connected to strategy	Not necessarily	Yes	Not necessarily
Independent way of working	Yes	Varies, but is normally a No	Varies, but is normally a Yes
Top management support	Not necessarily	Yes	Not necessarily
Common administrative support	No	Yes	Varies, but is normally a No

Table 5.1 – Differences and similarities between projects, programs, and portfolios

As stated, project portfolios are perhaps the most difficult to master. But even single projects can suffer from the lack of a good anchoring "upwards" and an unclear strategy behind the project goal. For smaller projects, this is especially prominent. Large organizations today have started to create their own "project office" to keep track of and better prioritize among their often many different project engagements. The main tasks for these offices is to monitor project portfolios, assist when resource conflicts, assist in developing internal project work forms, contribute to the gathering of experience and promotion of learning and maintain an overview of suitable project tools and methods.

A particularly important role for a *Project Office* is to stimulate knowledge development and learning. There is a big difference between learning in a school situation and learning in the real world, although the training effect must not be overdone. Adults are usually more interested in solving tasks and problems than being "taught subjects." Therefore, they learn best when theory and practice are not separated, but instead are combined in the learning process. Adults also have insights and experiences which, when correctly stimulated, promote learning. They are best motivated when the learning takes place in their current life and work situation as opposed to coming from their past experience or through deep, scientific analyses. There are just too many examples of heavy experience reports that are produced and stowed away in the archives and never recalled.

Consequently, a conscious learning process must be organized as well. It is not certain that the prerequisites for project learning are the best, even if a project office is established to take care of this. Large companies and the public sector are less willing to experiment than private companies and organizations.[71] Without being able to experiment, adults will be less willing to be adaptive to learning since rules, procedures and strict specifications inhibit the ability to experiment. After all, all the pressure in terms of clear goals and strict requirements at the start of a project will quickly limit the variation in possibilities needed for learning among adults.[72]

15.2   Practical Reflections behind the Statements in Stepstone # 15

For SMPs, conditions are not quite the same as for large and complex projects. As previously mentioned, it is a problem for SMPs that they depend to such a degree on individuals' efforts. In large projects, there are often groups that are allocated to the various AoRs. Individuals who drop out or do not perform satisfactory work can be compensated for by others within the same AoR. In SMPs, success will often depend on a few individuals, thereby implying a greater risk for delays and cost increases if, for a multitude of reasons, they cannot be present or have other high-priority tasks to occupy their time and mental engagement. Therefore, an SMP is particularly vulnerable to the enthusiasm and devotion of its project Core Team members.

An intriguing question in this respect is how an organization can improve its level of maturity so that it both directly and indirectly supports its projects.[73] A practical tool for accomplishing this is to perform a "Project Maturity Test"[74] based on the following dimensions:

a) The *attitude* within the base organization in relation to various aspects of a project's work, particularly: [75]
   1. An attitude of allowing risk and uncertainty to prevail in projects.
   2. An attitude of acceptance about giving authority and responsibility to projects.
   3. An attitude about the combination of hard and soft values in projects.
   4. An attitude towards cooperation for the benefit of the project.

b) The *knowledge* in the base organization of a project's work, particularly:
   1. The knowledge of how to accept the use of instinct and intuition in project work.
   2. The knowledge of different ways of working in projects.
   3. The knowledge of how to help projects to achieve their desired end results.
   4. The understanding of how totality is an intrinsic part of a project's work.

c) The degree of *action* with regard to projects within the base organization:
   1. Action at the strategic level (top management's strategic support).
   2. Action at the tactical level (through the line, through programs, through portfolios).
   3. Action at the administrative level (facilitation and support).
   4. Action at the operational level (supporting project execution).

The maturity test tool has 36 questions equally divided on all of the above items. The higher the score on all these factors, the more mature an organization is believed to be in respect to supporting project work.

Since all of this is difficult to simultaneously master when projects are small, success in SMP projects will depend more on having a quite flexible attitude to what is taking place. Still, many of the requirements mentioned in the project maturity test are for large and complex projects, though they also are also well suited for SMPs.

In addition, there are four issues that are of particular importance for SMPs:

1. As previously mentioned, to have "*moving targets.*" This implies a continuous willingness to change the original project goal and the level of ambition as new information and new knowledge accrue. If needed, even the SMP's TOR can be adjusted, although this can only be done by a higher authority (senior management, the client, the user or the customer).

2. Using the aforementioned "*the gardener's method.*" This consists of continuously testing and evaluating partial solutions – in much the same way that a good gardener operates when he or she is establishing a garden. An ornamental shrub here, a rose there, a flower bed here. So, depending on how the garden grows, they plant more. If it does not, they change locations.

3. To cope with "t*he gossip method.*" This means to communicate as much as possible all the time, both on a formal and informal basis. A continuous stream of new information and interaction stimulates creativity, afterthought and reaction. In SMPs, it is especially important to use all possible input to create a successful result after the project has been completed as well, and not just achieve a successful end result as was originally designed at the project's start.

4. Use "*agile technology*" and simple research methods, meaning to make project progress independent of specific choices related to computer technology and advanced compiling methods. Both technology and methodological tools are changing so quickly these days that in many cases it would be unreasonable to assume that the technology which is known at the project's start will be equally relevant throughout the entire life of the project.

The biggest problem for SMPs in this respect is perhaps that line departments which are not engaged in the project's work, and thus do not respect what a successful project requires, can act as discouraging brake pads. As mentioned earlier, persistent bureaucrats who sit far from the actual operations can embitter the situation for SMPs through unreasonable and foolish perceptions that weaken initiative and morale. In reality, such controlling agencies sitting in remote financial departments must shoulder a great amount of the responsibility for poor income and progress, both in the project and their own organizations as well. This is particularly relevant when they compensate for their lack of understanding with a destructive and self-centered exercise of power in bothering about insignificant details. The so-called Tetzchner syndrom, wich refers to a person who uses his power to try to destroy other people hoping to promote his own ego.

15.3   Conclusions on Stepstone # 15

For the reasons mentioned above, it is quite useful to examine how serious or "mature" the base organization for our SMP is in terms of qualified manpower support and a professional use of the project approach. For that purpose, Stepstone # 15, "Measuring SMP Support Success," is quite useful. This Stepstone contains 10 of the 36 questions of the complete Project Maturity Test, thus making it a shortened version.

What is particularly important for motivation and communication is to be aware that:

Good motivation comes from the feeling that the project is a central contributor to the base organization's project success.

Good communication comes from the professional gathering of experience from the project to the benefit ofthe base organization.

Stepstone # 15:   Measuring SMP Support Success

	The degree of agreement:	Very little 1	2	Medium 3	4	Very much 5

1   *To which degree have the project Core Team members recruited from the project`s base organization(s) shown a positive* **attitude** *to the demands made on them during project execution?*

2   *To which degree has the collaboration with project stakeholders from the project`s base organization(s) been constructive and* **supportive?**

3   *To which degree has the project been executed following a set-up or* **form** *fully agreed upon by the project`s base organization(s)?*

4   *To which degree has the project been initiated as an intrinsic part of a higher level* **strategy** *for the base organization(s) behind the project?*

5   *To which degree has the project execution benefitted from a favorable* **mix** *of technical, financial and social issues supported by the base organization?*

6   *To which degree has the project been initiated as an intrinsic part of an internal* **project portfolio** *in order to coordinate the project endeavor with other ongoing activities in the project base organization(s)?*

7   *To which degree has the project been able to fight competition from other internal projects to avoid to having continually* **defend** *its existence?*

8   *To which degree had the project endeavor gotten good* **administrative** *support from the base organization(s)?*

9   *To which degree has the project been supported by a* **project office** *or something similar throughout the project`s execution?*

10   *To which degree is the project`s fullfilment a* **success** *for the project`s base organization(s)?*

Total Score:

15.4   Summary of Chapter 5

This final chapter has dealt with the difficult measurement of "project success." For some, success is an objective, measurable issue. For others, it is a subjective, experience-related matter. For some projects, success is measured immediately, while for others it takes time for the project's effort and achievement of objectives to take its effect.

In this chapter, two ways of measuring a project's success have been discussed. The first is to use a wide range of measurement criteria that can be scaled and compared with what is common for projects in general. The tool used to accomplish this is PEVS, which has proven to be very useful for almost for any project regardless of its size, type, industry, reference or staffing.

The second tool looks at the support the project receives from its base organization, and the value and benefits a company or organization receives by using the project work form. By measuring the base organization's "project maturity," one investigates which areas are poorly or well taken care of, and thus the extent to which a project has a good chance of success. A base organization that positively supports a project will naturally give a company a greater chance to succeed with their projects than one that has little sense of the project concept's requirements.

In this chapter, the criteria for the creation and operation of a Project Office are also discussed, and the pitfalls and advantages such an office may have on SMPs.

16 Appendix A
Stepstone # 16: Detailed SMP Planning

16.1 Theoretical Reflections behind the Statements in Stepstone # 16

In large and complex projects, clear, detailed *activity descriptions* are the most important. Studies have revealed that the main reason why project plans fail are wrong *time estimates* for activities,[76] as it is obviously difficult to judge if a task will take one, two or three weeks to complete. It is probably also so that one tends to fill the time assigned or has assigned oneself to do the task. In this way, it will be a self-fulfilling prophecy for even the worst project plans with regard to the amount of time used. As a result, theories have been introduced which say that initial time estimates can be cut by as much as 50% and still leave enough time to finish a project.[77] Using this as a principle, one can build temporal *buffers* into the most critical range of activities, the so-called "critical paths." These time buffers can then be added to the end of the project plan and only used when necessary. The assumption is that practical people are often too pessimistic and have an initial tendency to underestimate their true capacity, especially for large projects. On the other hand will people in "selling" positions often unconsciously underestimate time and end up with far too optimistic schedules.

For large and complex projects, it is natural to use computer-aided programs for planning and management at this level. MS-Project (Microsoft Project) is the most widespread application, while other good programs are Artemis, Primavera, SuperProject and WebProject (Fronter.com). The problem with these programs is that very few practitioners fully master them, and those who do are not necessarily good at understanding the many practical project problems that may arise in real-life situations. The result is that when one is not completely familiar with the software or manuals (because these are also usually written by computer specialists), there is a limited interest in spending a lot of time and effort on data entry that will be Iittle used. Many therefore only use data programs to list activities and make pretty computer drawings, though perhaps this is something that should be viewed positively since this helps to avoid blind reliance on computer-made printouts, which at best are quite questionable and at worst wrong. In any event, trusting computer printouts can be misleading, lest we not forget that computers after all are only "useful idiots" that makes calculations from the data they are inputted with regardless of whether the data is correct or incorrect. Additionally, computer printouts still have a tendency to come after the project has already moved into its next phase.

16.2   Practical Reflections behind the Statements in Stepstone # 16

As previously contended, when SMPs are planned in detail the activities are in focus. But in SMPs, *decision times* are often the most difficult parameter to determine. In order to cope with this problem an important rule is that one should not, as in a major project, start with what to do first and then move forward. In SMPs, it is better to start with the *last activity* before the last milestone simply because it is the final goal that we know best. For each AoR, one should do this for all the milestones in its respective result path. The purpose of this is to only focus on what is needed to do and not include anything that perhaps can be done, but which contributes little to a rational and efficient goal fulfillment. In addition, one marks out what is likely to be particularly difficult to do. This sharpens our alertness and provides a better basis for evaluating the amount of time that decisions and activities will and even must take. Each activity is then drawn as a bar or a rectangle on a time scale marked from the end and forward, e.g. in weeks or days, displaying how long a period of time each combined decision and activity will take along with the allocated staffing.

At the same time, we know that many people can be far too optimistic, especially when they burn for a project. The result is that they give unrealistically short time estimates. It is also a good rule in detailed SMP plans to not expect more than 3.5 active days per week. There is always time that disappears to unscheduled meetings, sudden requests, redoing work and private activities. We must also not forget that decisions take time and the higher up in the system the decision is taken, the greater the chance that it will be delayed. This is not because managers at the higher levels are lazy and slow, but because the decision we need is perhaps not seen as being that important to them.

By the same token, when we try to shorten a project plan, it is often the activities that we have the least experience with that are reduced the most. This can result in very unrealistic plans from the very start of a project. Therefore, the detailed planning of an SMP is often a gamble if we do not manage these projects tightly and "force" time estimates to be correct. It is easy to forget that a plan is only a route map and should be used as such. We should regularly take time to look at where we are and compare and contrast our position with what we have planned. We should then take action to put ourselves back on course if we are adrift, to change course if the circumstances demand it, or alter the plan to reflect current realities. In SMPs, it tends to be budgetary variances that hurt the most, and the reason for investigating why is usually forgotten until it is too late. However, a plan is made to indicate our intentions for the future and as such, it should be used in much the same way we use a road map. Because of this, plans should be regularly consulted to ensure that their intentions are followed.

An additional factor is that if an employee is involved in several projects at the same time, it can be very difficult to assess the necessary time for all the activities he or she will be involved in. After all, it is not the physical working hours that need to be estimated, but the amount of time the execution takes in relation to the time axis. Even for large and complex projects, this is obviously a very important factor to consider.

To conclude, detailed project plans for SMPs should serve as references rather than as a setup we must slavishly follow. If there is an unreasonable mismatch between the intended workload and the resources allocated from the milestones, an SMP's schedule should be allowed to be adjusted from the "bottom-up."

Yet this is not always easy to achieve. Although specialization and labor division make us better able to cope with complex tasks, this paradoxically also contributes to even more project complexity. Thus, it must always be taken into consideration how detailed a plan should be to be an appropriate tool for our SMP.

16.3   Conclusions about Stepstone # 16

To assess whether our detailed plan is good enough for all of its intended purposes, we use Stepstone # 16, "Detailed SMP Planning," As noted, an emphasis is placed on *participation* in the planning, although not all participation is good. Many participants use an inordinate amount of planning because more opinions are brought up, including those that can be quite insignificant to the success of our SMP. This means that detailed planning can take a disproportionately long time and cost a lot. There may be many things to consider, and if the choices are narrowed, some may react and accuse the project leader of inflexibility and false democracy. Of course, the benefits of multi-faceted participation are also quite clear. The participants acquire an overview and insight, the plan is easier to obtain acceptance for, and many ideas increase the chance for better decisions.

> It is motivating to see how details clearly lead to goals being achieved. But having to work with details that one does not find a deeper meaning in is very frustrating for knowledgeable people.

> Good communication improves when activities and shared responsibilities are well connected in a logic network which one clearly sees leading to the fulfillment of the project's goal.

16.4   Stepstone # 16 Used on the Conference SMP

In principle for the conference SMP, every AoR can be broken down in further detail into "work packages,"78 individual activities and even daily operations if so desired. An expanded task list for the AoR, "conference program," can look like the one in Table 6.1.

ID	Activity description	Preactivities	Time in weeks	Staffing	Costs
1.	Preparation of all technical equipment	2,3,4	1	Secretary	2,000
2.	Hiring conference moderator	12	1	Project leader	3,000
3.	Hiring conference secretary	9	1	Project leader + Secretary	4,000
4.	Printing conference program	5	2	Secretary	1,500
5.	Adjusting conference papers	3,7	1	Project leader	0
6.	Sending reminders to speakers	7	1	Secretary	0
7.	Typing conference papers	8,11	4	Speakers + Secretary	0
8.	Paying conference papers	9	2	Project leader	20,000
9.	Deciding conference speakers		4	Project leader	0
10.	Adjusting conference agenda	3,6	1	Project leader	0
11.	Discussing conference topics	9	1	Project leader + Secretary + Speakers	0
12.	Transporting speakers and moderator	10	1	Secretary	1,500
	SUM				32,000

Table 6.1 – Activity list with staffing and cost estimates for the AoR, "conference program," in the conference SMP

The table shows that in total we have selected 12 work packages with a total cost of 32,000 Euros. Compared with the previously approved cost framework (ref. Volume I) for this AoR of 35,000 Euros, this calculation is acceptable. In contrast, we have not included either the direct or indirect costs for us as the project leader. The latter is somewhat incorrect, as we are on the payroll and therefore charge wages and overhead such as administrative costs. But often, SMPs will be considered as part of the regular job, so the labor costs are perceived as incurred whether the project is carried out or not.

On the basis of the network diagram, a bar diagram or Gantt chart79 for the "conference program" can be constructed as shown in Figure 6.1.

On the basis of the activity list with its pre-activities, a simple Network diagram can be drawn, as shown in Figure 6.1 below. Each activity is presented as two circles with an arrow connecting them, indicating the workload between the start circle and the end circle, illustrating each activity being a work package or a small sub-project by itself.

Figure 6.1 – The Network Diagram.

The diagram starts with Activity 9 which has no pre-activity. Looking at the pre-activity list from top to bottom, we can see that Activity 3, 8, and 11 all have Activity 9 as their pre-activity. The broken arrows mean "is depending on". By doing this for all activities the network diagram will end with Activity 1, which accordingly is to complete the AoR "Conference program".

Next step is to introduce the time estimates, here in weeks. These estimates are collected from Table 6.1, and presented on the other side of the work package arrow, in brackets. The reason is to visualize that time is a limited resource (within brackets), while the number above the arrow is the identification.

Figure 6.2 – The Network Diagram with time estimates.

In addition is each circle in Figure 6.2 now divided in four by a cross. The reason being that next step is to add times forward until a final estimate on this AoR is achieved. The result of this addition is shown in Figure 6.3.

Figure 6.3 – The Network Diagram with complete forward calculations.

The way of adding is simply to start with a zero in fourth quadrant in the start circle of Activity 9. Then adding the time estimate for Activity 9, and marking out the result in the next circle, "4", which is the end circle of Activity 9. When moving further there are three options, and if we for instance go to Activity 3, there is a broken arrow meaning "is depending on" between Activity 9 and activity 3. Since dependencies carry no time, the start circle of Activity 3 will end up with a "4" in fourth quadrant. The same we do for Activity 8, and so on. During these additions we will come to "cross-points". These are start circles with more than one arrow coming in. When that is happening, the rule is to select the highest time. This is shown fro the start circle of Activity 7, where Activity 8 comes with time "6", and Activity 11 with time "5". The time to carry further is consequently "6". Completing this operation, we end with a time estimate for the whole AoR "Conference Program" of 15 weeks.

Next question is, why 15 weeks? To find out why, we repeat the 15 weeks in quadrant one, and calculate backwards, now subtracting. This is shown in Figure 6.4 below.

Figure 6.4 – The complete Network Diagram with its Critical Path.

Starting from Activity 1 we can see that 15 minus 1 is 14, which is marked in first quadrant of the start circle of the activity. In addition we introduce the last rule for handling "cross-points" on the way back, in the sense that new cross-points will occur when backward arrows meet. The rule now is to select the lowest time. This is for instance happening for Activity 3 where the two backward arrows are carrying respectively 14 and 11 weeks. Doing this for all activities and their connections, we end up with a zero in first quadrant of Activity 9.

The last operation we do is to subtract the time written in quadrant four from the time in quadrant one and marking it out in quadrant 3. If the result is zero, there is no difference between the earliest start or end of this activity, and latest start or end. Where we find these zeros, we draw an extra thick or colored arrow, representing what is called the project`s Critical Path. If our time estimates are correct, it means that we cannot avoid this AoR sub-project taking us 15 weeks. At the same time other differences in quadrant 3 show "slack" or "float", indicating opportunities for flexibility in executing these activities. Typically in our diagram is Activity 3 which can start as early as at week 4 and end at week 5, but can also start as late as at week 10 and finish at week 11, and still not prolonging the 15 weeks sub-project time.

Figure 6.1 – The Gantt chart for the AoR, "conference program"

Drawing the diagram begins with the first activity on the Critical Path, Activity 9, allocated to week 1-4. Then next critical activity, Activity 8, and so on. Above the Critical Path shall now the other non-critical activities be placed, oriented to Earliest Start. The dotted line shows then the „slack", and the size of the slack shall be the same as the number, or time, in the 3rd quadrant in the network diagram.

The diagram can also be drawn directly from the Milestone diagram in the book Part I, highlighting the last milestone within this AoR, which is to distribute all the necessary material at the conference. Before this can be done, both the conference's moderator must be selected and all the material that has to be copied has to be delivered from the printing office. According to the activity list, these are Activity 2: "hiring conference moderator" and Activity 4: "printing conference program." Before we can print the program Activity 5, "adjustment of conference papers," must be completed. And before we can make these adjustments, we have decided that the conference papers must be typed, which is Activity 7, as well as hiring the conference secretary, which is Activity 3. By doing things in this manner, we use the activity list as our input for drawing the full Gantt chart.

Through this way of thinking, we quickly attain a rational and logical picture of how we can go about ensuring in more detail that the conference's professional content is good enough. Activities that we can move along the time line are placed where we believe they fit best according to the dotted lines. "Critical" activities, however, are tied to permanent places on the time axis and are also highlighted. At the same time, it may not be possible to get everything perfect by only looking at this AoR, so we have to wait for the diagrams from the other areas to see if we have to move more non-critical activities along the time line in order to create a final, detailed Gantt chart for the entire project.

The next step in the detailed planning of our conference is to add the human resource distribution, the "Resource Diagram", on top of the Gantt chart as shown below in Figure 6.2:

Figure 6.2 – The combined Gantt chart and the Resource Diagram for the "Conference Program" in the conference SMP

The Resource Diagram is drawn by identifying each person involved in the AoR, "Conference Program," on the left side of the diagram and then mark where they are involved in the project based on the lower portion of the Gantt chart. It does not matter whether this participation is full or part time. The most important thing is that they know when they will be involved and what type of responsibility this entails. As stated, the critical activities are highlighted to more easily see who must strictly comply with the planned time limits on the time axis in order to deliver their part acceptably to all the parties involved. Reading the diagram vertically, we observe who will work together as teams. We can see, for example, that Activity 11, "discussing conference topics," is done as a collaboration between the project leader, the speakers and the appointed secretary. We also note that we had to move this activity by one week in order to comply with our intention to involve the employed secretary in our discussion. Similarly, we had to split Activity 4, "printing conference program," between the secretary and us as the project leader in order for our secretary to fully take care of transportation, which is Activity 12.

The final step is to now present the upper part, the Resource Diagram, to our project superiors and for our project Core Team members to check whether they all agree that our SMP plan is acceptable as shown below in Figure 6.3:

Figure 6.3 – The Resource Diagram for the "Conference Program" part of the conference SMP

After this, the total time for the AoR, "Conference Program," is 16 weeks, including the week the conference is supposed be held. This will be the time from Milestone C2 to Milestone C3. In the Milestone Plan, we have divided this time interval into 5 periods. Assuming that each period will take an average of approximately 2 weeks, we now have to check if 2 x 5=10 weeks is enough time for our superiors to launch the conference after the showrooms, stands and speakers have been decided on. If their feedback is negative, we have to discuss to what extent the plan can be adjusted to fit a time frame that is acceptable to them. The most important thing to remember is that we are still in the planning phase, knowing that planning means to experiment with our resources without yet exposing them to real-life "brutality."

If we now assume that the start-up for Periods 1 and 2, finding showrooms and sending out the invitations for stands, will take one month or roughly four weeks (we of course have to confirm this with the other AoRs) and set aside a week for the post-evaluation, the entire conference project will take 21 weeks (16 + 4 + 1 = 21). Obviously, the AoR, "Conference Program," will take the most time so we have to inform the other AoRs as soon as possible about what time frames they will probably need to stay within. For instance, if we start out the conference SMP during week 10 which is the first week of March, the conference will be held in week 31 (the first week in August), with an evaluation the following week. After reflection, we believe this point in time may well be unfavorable due to the summer holiday season for many potential visitors. For that reason, we may choose to use our plan for a reverse approach, i.e. start by first determining the conference week. Let us say that we think the first week of September (week 36) is a good time for the conference. If this is the case, we do not have to start preparations for the conference before week 20, which is mid-May. If we put in a few vacation weeks for our staff, we should start no later than the end of April or the beginning of May.

Stepstone # 16:   Detailed SMP Planning

	The degree of agreement:	Very little / Medium / Very much 1 2 3 4 5

		Very little 1 2 3 Medium 4 5 Very much
1	To which degree does the project have a **Milestone Plan** well fitted for more detailed planning?	☐☐☐☐☐
2	To which degree have the project`s Core Team members been asked for their **advice** concerning the need for more detailed plans?	☐☐☐☐☐
3	To which degree have the project`s Core Team members been asked to **participate,** if so desired, in more detailed project planning?	☐☐☐☐☐
4	To which degree have the project`s Core Team members been asked to **fit** detailed plans within their respective areas of responsibility with an overall Masterplan or Milestone Plan for the project?	☐☐☐☐☐
5	To which degree do the detailed project plans contain pre-activities, time estimates, cost estimates, and manpower needs for each **individual** activity?	☐☐☐☐☐
6	To which degree do the cost estimates from each activity add up to be less than the **financial framework** for the project, according to its TOR?	☐☐☐☐☐
7	To which degree are activities and pre-activities combined in a logical system that makes it easy to recognize **dependencies?**	☐☐☐☐☐
8	To which degree for the project has a satisfactory **Resource diagram** been produced which directly reflects a **Gantt** D**iagram** for the project?	☐☐☐☐☐
9	To which degree are the time estimates **realistic** in comparison to the participants competence, capacity and availability?	☐☐☐☐☐
10	To which degree can the detailed plans for the project be ready for use by computer **software** if desired?	☐☐☐☐☐

	Total Score:	☐

17 Appendix B
Stepstone # 17: Agile SMP Control

17.1   Theoretical Reflections behind the Statements in Stepstone # 17

Many projects are very intensive and must be followed up on an almost daily basis. Such monitoring should be systematic, fast and flexible. The reason for this is that many projects today have to move from expeditor to entrepreneur, from expected performance criteria to direct and constant feedback as well as from planning to learning.[80]

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The ADC method[81], or the "Scrum Principle", was originally designed for the flexible development of ICT projects, but has been found to be usable for almost all kinds of projects. The most popular Agile methodologies include Extreme Programming (XP), Scrum, Crystal, Dynamic Systems Development Method (DSDM), Lean Development and Feature-Driven Development (FDD). While each of the Agile methods is unique in its specific approach, they all share a common vision and core values. They all fundamentally incorporate iteration and the continuous feedback that it provides to successively refine and deliver an end product. They involve continuous testing, continuous integration and other forms for the continuous evolution of the project.

The method has three phases as shown below in Figure 6.4:

1. Speculation
2. Collaboration
3. Learning

Figure 6.4 – The ASD Process

The keywords illustrate the importance of thinking about *constant change*. "Evaluation" replaces traditional "planning" because uncertainty is traditionally seen as both a disadvantage and a weakness in a plan. Plan deviation is also traditionally considered a failure, although perhaps deviations are of vital importance for achieving a better understanding of a project's processes. "Cooperation" focuses on the effects of teamwork and is regarded as a positive challenge. "Learning" stresses self provision in reacting to errors, and that needs can change when exposed to real project development.[82]

In the initiation phase, the TOR for the project is decided. As previously described, the TOR limit the degree of freedom the project team can be allowed in terms of time, money, quality and perhaps other parameters as well. What is most important here is to determine the project's *mission*. Based on the mission, the project's basic assumptions about the data needed, the standard of the end product, and the length of the evaluation periods, "*the sprints,*" are decided. Sprints can vary from between two to four weeks, but usually consist of 28–30 days.

The process is typically *product-oriented*. The most important matter is not how products or semi-products are developed, but that they *are* developed. In the sprint periods, the project team will have daily follow-up meetings. These meetings last a maximum of 15 minutes and are "stand-up meetings." During these meetings the team should bring up what has been done and observed since the last meeting, which is measured against what *remains* to be done. In addition, what might be new information and new knowledge that can change and improve product development is discussed. Some of these new matters can shorten and improve the product development process, while others may require that the remaining work be adjusted within the TOR, so that an even better end product can be made.

Philosophically speaking, perhaps the most important aspect of Scrum is that this way of working changes the traditional view that "we must know what we want before we know how to go further," since the unfortunate reality can be that a project's goals will be obsolete the moment they are reached. In reality, a strategy that is based solely on the knowledge available at a project's start-up will be innovation's enemy. Scrum has the opposite view; namely, that "time" is a resource, not a limitation. By using the time actively, Scrum creates a project progress that is in continuous development. This "moving target" principle is illustrated below in Figure 6.5:

Figure 6.5 – The Scrum principle

What is particularly important in the cooperation phase is that the user, customer or client is involved and that the process is empirical or based on personal experiences.[83] In this way, external variables such as changes in the marketplace, changed requirements, changed need for project completion, environmental issues and new ICT development are immediately included. According to studies, however, Agile project managers use more intuitiveness and sensitivity in the operation, score motivation and lower emotional resilience than do line managers. Internationally intuitiveness, communication and development score high, while motivation and conscientiousness score significantly lower.[84] One should therefore be careful when using Agile methods if the purpose is also to enhance motivation and relationships among the project team.

17.2   Practical Reflections behind the Statements in Stepstone # 17

Today, Agile methodologies have had a significant practical impact on the Project Management community by introducing new ways to manage time, cost and scope. One important reason is the rapid development of computerized follow-up systems and the closer cooperation between machine and man made possible by the use of new technology. But we must be aware that ICT has a strong impact on organizations, thus exerting an influence on how people work and structure both the way they work and the way they behave. It is wise to reflect on current experience about this kind of "moving target" principle. According to studies[85], project teams under pressure tend to scramble to meet expectations, testing is short, documentation is not done, and quality is compromised.

What seems clear is that Agile methods help project leaders embrace change and manage risk through the delivery of valuable output, both as final products and as an ongoing process, without necessarily computerizing the change process. They focus on *empowering people* to collaborate and make decisions together fast and effectively.

The leader of this process in SMPs is called the *Scrum leader*. In larger projects, this role can be delegated, but in SMPs it is necessary for the Scrum leader to have a very close connection to the daily project operations. The main responsibility for the Scrum leader is to ensure that all new and relevant information is added to the project and given appropriate priority according to its value. Prioritization can be undertaken by the Scrum leader alone, but is often better done in collaboration with a superior agent. When new items are decided to be included or previously planned elements taken out, it is up to the project's Core Team members to determine how this shall be effectuated. If, for example, they find that a new item will be in conflict with the TOR of the SMP, they shall have the opportunity to speak up, though in principle they will have been delegated enough responsibility to find a way they deem acceptable for continuing the SMP's improvement process.

On the last day of the full Scrum cycle the total results are presented in a meeting to higher level management, the client or the user. In the meeting, it is agreed on with regard to possible framework changes or other favorable adjustments for the benefit of the next Scrum cycle. More than one Scrum can work in parallel and if they have a common purpose, a Master Scrum can be established which coordinates the single Scrums. In this way, the management of a Master Scrum can be similar to project portfolio management. Because Scrum does not need special methods or techniques, it is up to the Scrum participants themselves to decide on how they want to work.

17.3   Conclusions about Stepstone # 17

To assess whether a detailed control of our SMP is necessary, we can use Stepstone # 17: "Detailed SMP Control," which constitutes specific questions about both leadership and participation when using the Scrum method. The need for more a detailed follow-up means that a minimum total score of 40 is required. Viewed in the extreme, this Stepstone can be run every day, but for most SMPs this can be too overwhelming. It is better for SMPs to use Stepstone # 17 a maximum of one time per week if a detailed follow-up of our SMP is felt to be appropriate.

With a response rate of 80% or better, the next step is to turn back to Chapter 4: "How to lead SMPs."

> What is most important in terms of motivation at this Stepstone is that the project is perceived as making an important contribution to its base organization.

> What is most important for good communication is that a professional gathering of experiences from the project endeavors acts as a way of communicating with the base organization.

17.4   Stepstone # 17 Used on the Conference SMP

In the conference SMP, the first part of the "Conference Program" could be Scrum developed. The first part takes place between Milestones C1 and C2, and the objective is to find suitable speakers. This is typically a process that can change as potential speakers are contacted to see whether they appear interested or not, deliver idea sketches that are being considered, rejected or included, find new speakers, reduce or expand the number of speeches, get input on local facilities (Milestone P1, which will be passed while the searching and provision of possible speakers is going on), discuss fees, consider alternative forms of presentations, and so on. Since all of this is intended to take approximately four weeks, this may be a good opportunity for running a Scrum cycle.

Stepstone # 17:   Agile SMP Control

	The degree of agreement:	Very little	Medium	Very much
		1 2 3 4 5		

1 To which degree was the **Project Leader** familiar with Agile Methods and the **Scrum Concept** ?

2 To which degree were the project`s **Core Team members** and other central project participants and contributors familiar with the **Scrum** Concept?

3 To which degree were the majority of the project participants **positive** to using Scrum, including the often swift changes in operation consideration the method implies?

4 To which degree have Scrum meetings followed the principle of **stand-up** meetings?

5 To which degree have Scrum meetings lasted a maximum of **15 minutes?**

6 To which degree have Scrum meetings been run **effectively** and with a good spirit?

7 To which degree have Scrum meetings been **summed up** in writing in a proper way?

8 To which degree has the Master Plan and/or detailed plans been **updated** a result of the **Sprint** information produced by Scrum?

9 To which degree are the results of Scrum cycles **presented informally** to the project principal or the project client?

10 To which degree has the use of Scrum and the results of Scrum been **discussed** with project superiors from time to time?

Total Score:

18 Appendix C
Stepstone # 18: SMP Risk Assessment

18.1   Theoretical Reflections behind the Statements in Stepstone # 18

Risk is defined in ISO 31000 as "the effect of uncertainty on objectives" (whether positive or negative). According to Wikipedia,[86] *risk management* means to be conscious of the identification, assessment and prioritization of risk followed by a coordinated and economical application of resources in order to minimize, monitor and control the probability and/or impact of unfortunate events or to maximize the realization of *opportunities*. Risk can come from uncertainty about project failures, accidents, natural causes and disasters, as well as deliberate attacks from an adversary. In the theoretical literature methods, definitions and goals vary widely according to whether the risk management method is in the context of project management, security, engineering, industrial processes, financial portfolios, actuarial assessments or public health and safety.

The strategies to manage risk include transferring the risk to another party, avoiding the risk, reducing the negative effect of the risk and accepting some or all of the consequences of a particular risk. Certain aspects of many of the risk management standards have come under criticism for having no measurable improvement on risk even though the confidence in estimates and decisions increases.[87] In principle today in relation to project-related risk calculations, one can distinguish between risks connected to a so-called minimax payoff of the project investment, a minimax payoff with disadvantage calculations and traditional expected-value calculations.

Minimax payoffs simply measure for each project alternative the best and worst probable outcome in all future project periods, normally on a yearly basis. Then one selects the alternative that yields the least amount of loss. When the *payoffs with disadvantage* are used one extends the payoff with how much one is willing to lose in each alternative when compared to the best payoff alternative. Traditional *expected-value* calculations simply come from multiplying each outcome in each period by the probability for the outcome to take place and then selecting the one that is comparably the best.

Judging which theoretical alternative to go for depends on the prevailing situation that both the project and the company are currently experiencing. In general, the minimax payoff decision is a very pessimistic one. The reason for this is that it always takes as its starting point that the worst will occur, regardless of how small the risk is. In a "war" situation with a hostile opponent or competitor, this could be the best policy. But the alternative is seldom relevant in active businesses unless you really must defend yourself, which can happen if competition is threatening the existence of both the project and the entire company.

The most normal outcome is the expected value calculations, though these obviously make great demands on the accuracy of the probability assumptions. The best policy when using this form of risk calculation is to use slightly pessimistic assumptions.

The middle alternative "payoffs with disadvantage" is an interesting alternative since it gives a certain "safety" in choosing the best alternative and reduces the disadvantages of choosing wrongly.

The final decision of which alternative to go for has to do with an individual's or team's receptivity, aversion to risk and tolerance for unresolved situations. One should therefore study more closely how both individual project participants and teams react to the risks that a project can be confronted with. If it becomes clear that the project involves quite a bit of risk, then in theory more thorough risk analyses need to be performed. The intention must be to focus on what it pays to use the energy to do something with and what has such a low level of danger that you do not need to take account of it. In any event, you can never guard yourself against all the risks.

Still, if we should investigate risk as part of the project process we have to rely on the principle that we have not defined risk until we are able to measure it. A decision about risk will always be a good balance between tolerable risk and an inspiring challenge, remembering that cost figures are closer to the current situation, while benefit figures are more in the future and for many projects are less predictable.

18.2   Practical Reflections behind the Statements in Stepstone # 18

If it becomes clear that our SMP project involves quite a bit of risk, a more thorough risk analysis should be performed. Its intention must be to focus on what it pays to use the energy to do something with and what has such a low level of danger that one does not need to take it into consideration. But we do not need such intricate risk analyses as we do in the large, costly and complex projects.

Instead, we can simplify risk probability by dividing it into three different types:

The first type is risks that are *known*. They are those that we already recognize when we define the project and are considering the chances of reaching the goal within the TOR. Based on experience, one can estimate most of these risks with quite a high degree of accuracy.

Then come the risks that are *likely* to happen and which may arise from what has been experienced from similar projects. They may be due to changes in the workforce, in the economic conditions or in the attitude of the client or stakeholders. The chances of these risks taking place can be projected from both a "gut feeling" and a suspicion.

The next type is risks that are *unpredictable*. It is the unexpected that suddenly happens that one could not imagine that is outside both the project manager and project staff's awareness. The fact of the matter is that one can simply not predict everything.

Still, if we should investigate risk as part of the project process, we have to rely on the principle that we have not defined risk until we are able to measure it.

The first step in a practical evaluation of risk in SMPs is to create two columns of assumptions. The first column we shall call the "probability scale" and the other the "consequence scale," which is illustrated in Table 6.6.

Risk Assessment Matrix			
Likelihood of risk		Severity of risk	
1.	Is not assumed to happen	1.	Insignificant consequences
2.	May happen, but unlikely	2.	Small damage to the project
3.	There is an even chance it will happen	3.	Will damage the project
4.	May well happen because it is common	4.	Severe damage to the projects
5.	Will most probably happen	5.	Disaster for the project

Table 6.6 – Risk and consequence assessment scales

We can run this test for each major activity or AoR. All project Core Team members should participate in the setting of scale values. The reason for this is that people can easily both overrate and underrate the risk potential based on too limited an amount of experience, personal pride as far as not disclosing their own incapability or an unnecessary concern about not being capable enough. Research has even concluded that the less influence human beings have on data and information entry in project settings the better.[88] To talk about risk level and consequences with other people can be a relief for many and make estimates more realistic.

18.3   Conclusions about Stepstone # 18

To assess the extent to which the project leader has the mandate, power and authority to make a call to action if the SMP involves a large amount of risk, we use Stepstone # 18, "SMP Risk Assessment." An 80% positive response will be sufficient to assess whether the project's risk level is manageable, and if needed, we must return to Chapter 4.6, "How to handle risks in SMPs."We only use the other Stepstones when needed. If no major, serious incidents have taken place, it is not be natural to spend too much time on more elaborate risk analyses in SMPs.

What is most motivational in this respect is performing a risk analysis, thereby helping to reassure the continuation of a successful project progress. It is a certainty that some degree of risk or anxiety is also a driving force.89 It is when the risk is higher than the felt ability to master the situation that risk becomes negative and energy reducing. Therefore, it will always pay to have an open understanding about the degree of risk and not try to hide or trivialize it too much.

As far as communication, it is important that the degree of risk is communicated to all of the project's key executives and other key stakeholders. Additionally, the consequences and action options must be conveyed to our superiors in order to feel assured about the continued development and progress of the SMP.

18.4   Stepstone # 18 Used on the Conference SMP

For the conference SMP, we should start with an assessment of which activities can be risky, the probability that it will happen by using our probability scale and the consequences if it happens by using the other scale. Once this has been accomplished, we need to consider what the reason might be for the risky situation to occur and what action should be taken.

The results of this assessment can be seen in Table 6.7.

	Risk factor	Probability	Consequence	The most probable reason	The most effective action
1.	We cannot find appropriate localities within the cost frame decided by our superiors	"2"	"3"	Superior management has not been updated on the market price of localities	Immediately orient superiors about the tough competition for conference localities
2.	We are unable to attract enough visitors and conference participants to make the conference worthwhile	"3"	"4"	Prospective visitors react negatively to the conference fee	Reduce the conference fee
3.	The speakers we invite are not up to the mark, making the conference a failure	"3"	"5"	The competition for top quality speakers is severe	Increase fee rates for potential conference speakers
4.	The brochures are not delivered in time	"3"	"3"	The printing company is selected according to the lowest cost principle	Change printing company
5.	The catering is bad	"1"	"2"	The catering company misunderstands our requirements	Call an extra meeting with the selected catering company

Table 6.7 – Risk and consequence matrix for the conference SMP

To create a visual overview of the situation, we draw a Probability-Consequence diagram as shown below in Figure 6.6:

Figure 6.6 – The Probability-Consequence diagram for the conference SMP

The conclusion after this is that all of the first four risk factors should be taken seriously and the proposed actions implemented. In terms of risk for the last factor, "that the catering fails," we should consider this to be both small and less dangerous, and we decide to do nothing for the moment.

Stepstone # 18:   SMP Risk Management

	The degree of agreement:	Very little 1	2	Medium 3	4	Very much 5
1	To which degree does the Project Plan have openings for **discussing** risk aspects?					
2	To which degree between milestones have risk lists been produced to show **potential** risk areas?					
3	To which degree does there exist a **list** of probabilities connected to each risk item?					
4	To which degree has the magnitude of risk for each activity and the probability that unplanned incidents will occur been **discussed** with relevant expertice?					
5	To which degree has there been a description for each probable risk with the **consequences** that may follow?					
6	To which degree has there been an **action** suggested for each risk situation which can be implemented on short notice?					
7	To which degree has there been made a risk acceptance and a non-risk acceptance **diagram** showing all risk-exposed activities when appropriate?					
8	To which degree at Milestones are project **superiors** aquainted with the different risks further project execution might imply?					
9	To which degree is the Project Leader been delegated enough authority to carry out **risk reducing operations** when he or she finds it necessary?					
10	To which degree is the Project Leader **brave** enough to start comprehensive risk reducing operations, even if formal authority is not given when necessary?					

| | Total Score: | | | | | |

19 Endnotes

1..   Jessen, S.A., 2008. "Prosjektledelse Trinn for Trinn. En håndbok i ledelse av små og mellomstore prosjekter." 2. utgave, Universitetsforlaget, Oslo.

2.   For these kind of projects, advanced recipes are available such as PMI-BOK, PRINSIX and PROPS, as well as recognized project-software such as the Harvard Project Manager, Microsoft Project (MS-project), Artemis, Prima Vera and Superproject, to mention some of today's most recognized products.

3.   Meredith, J.R. and Mantel, S.J., 2008. Project Management: A Managerial Approach, J Wiley, NJ.

4.   Academic JournalWinter, M. and Smith,C. et al., 2006. "The importance of 'process' in Rethinking Project Management: The story of a UK Government-funded research network." Citation from the International Journal of Project Management, Vol. 24, Issue 8, pp. 650–662.

5.   This is what knowledge management theory calls *socialization and externalization*, i.e. sharing tacit knowledge and making tacit knowledge explicit through interaction.

6.   Based on a presentation by J.R. Dawes, "Ten Strategies for Effective Discussion Leading," held at The Norwegian School of Management – BI, 2009.

7.   Yukl, G., 2010. "Leadership in Organizations," 7th Edition, Prentice Hall.

8.   The six-box model is perhaps best characterized by the so-called "transactional leadership," which emphasizes rewards and incentives (Bass, B.M. and Avolio, B.J. (ed.), 1994. "Improving organizational Effectiveness through Transformational Leadership," Sage, Thousand Oaks, CA. Its counterpart is the so-called "transformation management," which points to the importance of stimulating and inspiring action among employees.

9.   PSO stands for People, Systems and Organization, and was "invented" by Andersen, E.S., et al., which is described in their book "Goal Directed Project Management." The idea is that no modern project can be successful unless these three elements are simultaneously combined in project endeavors.

10.   Internal Rate of Return.

11.   Business Support Systems.

12.   Zero Base Budgeting.

13.   Jessen, S.A., 1992. The Nature of Project Leadership, Scandinavian University Press (Universitetsforlaget), Oslo.

14.   Lipovetsky, M., et aI., 1997. "The Relative Importance of Project Success Dimensions," R & D Management.

15.   The US-based worldwide organization PMI (PMI Standards Committee, 1996, A Guide to the Project Management Body of Knowledge, Upper Darby, PA) accredits project managers on the basis of their examinations in the subject (also known as PMI-BOK) (op. cit.).

16.   Weiss, J.W. and Wysocki, R.K., 1992. 5-Phase Project Management, Addison-Wesley Publ. Co. NY.

17.   Jessen, S.A., 2002, op. cit.

18.   Jarvenpaa, S.L., Shaw, T.R. and Staples, D.S., 2004. "Toward Contextualized Theories of Trust in Global Virtual Teams," Information Systems Research, vol. 15, issue 3.

19.   S. Leyborne and E. Sadler-Smith, 2006. "The role of intuition and improvisation in project management," International Journal of Project Management, issue 6.

20.   Olsson, N., Frydenberg, S., Jakobsen, E.W., Jessen, S.A., Sørheim, R., Wago, L., 2008. "Investors vurdering av prosjekters godhet," Concept Report No. 20, NTNU.

21.   Standish Group, 2010, published in April 2010 the world`s largest study on IT projects examining over 70.000 IT-projects and concluded that only 32% of them reached a successful outcome. In their so-called Chaos Manifesto they identified the "Project Management`s five deadly sins".

22.   Nobel laureate Herbert Simon (Augier, M. and March, J.G. (ed.), 2004. "Models of Man": Essays in memory of Herbert A. Simon introduced his theory of "bounded rationality," which is the human inability to overview all options and values when they make individual choices.

23.   March, J.G. & Olsen, J.P., 1976. Ambiguity and Choice in Organizations, Universitetsforlaget Oslo.

24.   Lee, S.Y., Florida, R. and Acs, Z.J., 2004. "Creativity and Entrepreneurship," Regional Studies, vol. 38, issue 8. Rolstadås, A., 2001. Praktisk prosjektstyring, Tapir Academic, Trondheim.

25.   Meredith, J.R. and Mantel, S.J., 2003. op. cit. (Chapter 3).

26.   The Garbage Can Model of organizational theory was developed in 1972 by Michael D. Cohen, James G. March and Johan P. Olsen. It was developed in reference to "ambiguous behaviors", i.e. explanations/ interpretations of behaviors which at least appear to contradict classical theory.

27.   BSC was originally developed to measure the total degree of strategic and economic achievement through specific measurement parameters that were designed so that each goal parameter had at least one defined scale and each measure at least one measurable unit which directly contributed to reaching the overall goal. In this way, strategy could be operationalized to a certain degree.

28.   Communication technology, including the Internet, has led to major changes in daily work and significantly increased opportunities to follow up projects. Through so-called "web-casting," one can update almost anything with no loss of time. The knowledge economy is about to be replaced by the "everywhere economy."

29.   Wenell, T., 2002. op. cit. (Chapter 3).

30.   Wenell, T., 2002. op. cit. (Chapter 3).

31.   Originally, the purpose of Earned Value was to calculate the project's development by registering how much was actually completed in a project compared to the original estimates on what the performance of various activities would cost. Because the costs of performing these activities does not necessarily increase in proportion to the time needed to carry them out, those calculations have led to many incorrect estimates, particularly since the calculations were used for creating prognoses. A simpler variant (shown here) is to separate costs from the volume of quantity of the completed work. Since the left side of the equation describes our *assumptions* at the project's start and the right side is the *real situation* at each point of the observation, the Cl becomes a measurement of "assumptions x reality."

32.   Wenstøp, F. and Koppang, H., 2009. "On operations research and value conflicts," Omega, Vol. 37, Issue 6.

33.   Herbert Sirnon (2004, op. cit.) distinguishes between fact elements and value elements, especially in decision-making situations. The first can be controlled, while the other is based on human feelings and attitudes. Both have great importance for the decisions made by decision makers.

34.   Samset, K., 2004. op. cit. (Chapter 1).

35.   This is studied by Peer Soelberg (Unprogrammed Decision Making, Cambridge, MA, 1967), who makes a distinction between the shorter, first "decision time" and the following, longer "confirmation time." Together, they are the "decision process time," which means that managers decide fairly quickly, but wait to announce their decision even though it has actually already been made! Arguments supporting the captured decision are mentally noted, and arguments that go against the decision are mentally rejected.

36.   Moreland, R.I., Hogg, M.A. and Hains, S.C., 1994. "Back to the future. Social psychological research on groups," Journal of Experimental Social Psychology, 30.

37.   Lewin, K., I997. "Resolving Social Conflicts and Field Theory in Social Science," American Psychological Association, Washington DC.

38.   Thye, S.R. and Lawler, E.J., 2002. Group Cohesion, Trust and Solidarity, JAI, Amsterdam.

39.   Guzzo and Dickens (Team Effectiveness and Decision Making in Organizations, 1995) has a more elaborate definition: "A team is a collection of single individuals that exists within a larger social system such as an organization, and are identified both by others and themselves as a team that is independent and who perform tasks that affect other individuals and groups."

40.   Watson, W., 2002. "Workforce Demographics – The Pattern for a Benefits Package that Fits," Flexible Benefits (Aspen), vol. 10, issue 7.

41.   Busch, T. and Vanebo, J.O., 2000. Organization, leadership and motivation, Universitets forlaget, Oslo.

42.   Graham, B., 1990. "Project Management As lf People Mattered," Primavera, USA.

43.   Jessen, S.A., 1990. op. cit. (Chapter 1).

44.   Jessen, S.A., 1990. op. cit. (Chapter 1).

45.   Jessen, S.A., 1990. op. cit. (Chapter 1).

46.   According to Bob Sutton (McKinsey Quarterly, September, 2010) bad bosses can kill people. In a study it was concluded that subordinates had up to 40 percent more heart attacks than people who had good bosses. Yet even the most imperious executive depends on employees to do just about everything, and, even in a terrible job market, it can be hard to retain them. A good example is the finance director short-time employed at the Norwegian School of Management, BI, who used all his effort to harass other people and behave unethically, believing that would move him up the ladder. The result was that he was asked to leave. But what is interesting is that he soon later became the chairman of a political party in Norway, and even got a seat in Parliament! The big question after this is not how do leaders behave, but who *select* leaders?

47.   Kile, S.M., 1990. "Health-threatening managers – and employees," Hjemmets Bokforlag, Oslo.

48.   According to Diener and Crandall (1978), ethical principles can be broken down into four main areas: whether there is harm to the participants, whether there is lack of informed consent, whether there is an invasion of privacy and whether deception is involved. The former director in the footnote above broke all of these principles.

49.   It is alleged that when the Norwegian Mongstad oil refinery was delivered, it was just after the principle of "sunk costs." Because of a political decision, the first 5 billion NOK of the project costs were left out and the result was a positive benefit-cost-fraction. And since Norway is an oil nation and could better refine the oil itself, Mongstad is technically a very successful project. Mongstad is a good example of how political cleverness can be far better than more narrow-sighted economic calculations.

50.   Ridderstråle, J. and Nordsrrøm, K.A., 2004. "Karaokekapitalisme," introduced the concept of "cosmocrates" in relation to today's young people who struggle with mastering both job and a valuable family life at the same time. Universitetsforlaget, Oslo.

51.   Fisher, A., 2000. "Is Your Career Killing You?" Fast Company. NY.

52.   Young, M.L., Bates, B.B. and Pratt, A.K., 2007. "Using Selection, Optimization, and Compensation to Reduce Job/Family Stress: Effective When it Matters," Journal of Business and Psychology, vol. 21, no. 4.

53.   Yerkes, L., 2003. "How to Create a Place Where People Love to Work," Journal for Quality and Participation, vol. 26, issue 4.

54.   Moxnes, P., 2001. Dyproller; helter, hekser, horer og andre mytologiske roller i organisasjonen," Forlaget Paul Moxnes, Oslo.

55.   Jack Homer, PhD, who earned his doctorate on his own collapse as a student at MIT (1984).

56.   Ridderstråle, J. and Nordstrøm, K.A., 2004 (op. cit.), who refer to the Japanese concept of "karoshi" – death as a result of too much work.

57.   There is a distinction between two main decision theories. In Neo-Classical Theory, the decision maker obtains an overview of aII relevant options and their consequences and finds maximization or optimization. In Behavioral Theory, one tries to find solutions based on real observations and from thisdeduct possible theories about how decision makers act in decision making situations so that patterns and understanding can be obtained.

58.   Right Management, SAS, 2010, Sophia Antipolis, Valbonne, France

59.   In a study of 32 public projects in Norway in 2004, 22 had time transgressions and the main reason was that the project manager had left, or been asked to leave, the project.

60.   Yerkes, L., 2003, op. cit. "How to Create a Place Where People Love to Work," Journal for Quality and Participation, vol. 26, issue 4.

61.   Another way to define uncertainty is as a product of probability and unknown numbers, while risk is the product of probability and known numbers.

62.   Samset, K., 2004. op. cit. (Chapter 1).

63.   Busch, T. and Vanebo, J.O., 2003. op. cit. (Chapter 3).

64.   Munns, A.K. and Bjerimi, B.E., 1996. "The RoIe of Project Management in Achieving Success," International Journal of Project Management, vol. I4, issue 2.

65.   Fangel, M., 2008. "Systematic Planning and Evaluation of the Project Management Effort," Prosjektledelse no. 1, NFP.

66.   PEVS can be found on the internet under NSP.no and can be downloaded free of charge.

67.   Gareis, R., 1990. op. cit.

68.   Wenell, T., 2002. op. cit.

69.   For example, Norsk Hydro AS will not release a project past the so-called "O" point until a maturity analysis has been performed.

70.   Andersen, E.S. and Jessen, S.A., 2003. "Project Maturity in Organizations," International Journal of Project Management, vol. 21, issue 6.

71.   Jessen, S.A., 1994. The Use of Projects in Public and Private Norwegian Organizations and Enterprises, IRNOP, Luleå.

72.   Keegan, A. and Turner, R., 2002. "The Management of Innovation in Project-Based Firms," Long Range Planning, vol. 35, issue 4.

73.   Lyneis, J.M., Ford, D.N., 2007. "System Dynamics Applied to Project Management: A Survey, Assessment, and Direction of Future Research," System Dynamics Review, vol. 23.

74.   http://www.nsp.ntnu.no/ The Project Maturity Test.

75.   Hofstede, G., 1998. "Identifying Organizational Subcultures," Journal of Management Studies, vol. 35.

76.   Wenell, T., 2002. op. cit. (Chapter 2).

77.   Goldratt, E., 1997. op. cit. (Chapter 3).

78.   Work packages can be defined as continuous tasks that use the same equipment until the task is completed. As a rule, labor packages are delegated to individual workers who then take full responsibility for its performance from start to finish.

79.   The two most famous project planning techniques that use bar diagrams to illustrate the project's plan and progress are PERT (Program Evaluation and Review Technique) and CPM (Critical Path Method). Both methods were developed in connection with the American Polaris program in 1958. Both methods are based on a logical compilation of activities, meaning that one must calculate the so-called "critical path," which is the order of activities that takes the longest time to execute in the project. All activities can then be drawn into a cross-axis diagram with activities on the vertical axis and time on the horizontal axis, so that both sequential and parallel activities are shown. The way to do this was originally created by Henry Gantt in connection with production planning in 1918.

       A later designation for such methods is "network methods," which show the logical dependency between the decisions and activities as a visual network. The reason that the network method is not always suitable for SMPs is that operating costs related to data collection, drawing and redrawing, and calculations and recalculations may be large. In the end, it takes less time to give an order than to endlessly discuss an issue in order to arrive at an even simple agreement.

80.   D.E. Meyer, Lock and Pich, 2002. "On uncertainty, ambiguity and complexity in project management." Management Science, 48(8): pp. 1008-1024.

81.   ADC stands for Adaptive Development Cycles and was developed by James A. Highsmith 111 (2000) for large and complex ICT systems. The objective was to encourage so-called "incremental, iterative development" and constant "prototyping." He himself called this way of working "unbalanced project development on the edge of chaos."

82.   Senge, P., 1999. op. cit. (Chapter 1).

83.   In the literature, the empirical element in such processes was originally laid down by the Japanese Takeutchi and Nonaka (1986). Today this is referred to as "Scrum," an expression taken from rugby and describing the situation that occurs when the ball is out of the game and then brought back into the game when one gathers shoulder to shoulder to decide tactics.

84.   R. Müller lecturing in 2010 at the Norwegian School of Management and referring to his own findings, together with Professor Turner.

85.   Den Norske Dataforening, 2010, "Extreme Scoping: An Agile Approach to DW/BI Projects", Kursinfo, Oslo

86.   http://en.wikipedia.org/wiki/Talk:Risk-management

87.   Daruvala, D., 2007. "Gender, Risk and Stereotypes," Journal of Risk and Uncertainty, vol. 35, No. 3.

88.   Evans, J.R. and Lindsay, W.M., 1988. "A Framework for Expert System Development in Statistical Quality Control," Computers and Industrial Engineering, Vol. 14, Issue 3.

89.   Moxnes, P., 2001. op. cit. (Chapter 4).

20 List of Key Words and Expressions

21 About the Author

Svein Arne Jessen

PhD from Brunel University, Henley Management School, UK, and USC, University of Southern California, USA, 1989.

MSc from University of Oslo, 1969.

Main current position: Professor emeritus at the Norwegian School of Management, Oslo.

Additional current positions: Adjunct professor at the University of Tromsø and Harstad (Norway), associate faculty at Henley School of Management (UK), affiliated professor at Fudan University (Shanghai, China), associate faculty at Supaero Technical University, Toulouse, associate faculty at STUniversity in Aix-en-Provence, at CERAM in Sophia Antipolis, and at HEC in Paris, France, International Dean of Studies at PPMI – Pan Pacific Management Institute (Beijing, China), Member of Executive Board, TsHiba, Cape Town Universty, South Africa.

Consultancies: In addition to the large Norwegian companies such as Statoil, Norsk Hydro, Statskraft, NKL, he has also been working internationally in the Philippins (World Bank), Malaysia (World Bank), India (NORAD), Sri Lanka (NORAD), Tanzania (NORAD and DANIDA), Mozambique (NORAD), Malawi (AFDB), Jamaica (NORAD), Bhutan (World Bank), and in Check Republic, China, Denmark, The Dominican Republic, Egypt, Finland, Germany, Iran,, Italy, Japan, Kenya, Portugal, Russia, Singapore, Sweden, Saudi Arabia, Thailand, Trinidad & Tobago, Ukraina, Vietnam.

Address:

Norwegian School of Management

Nydalsveien 37, 0484 Oslo, Norway, www.bi.edu

Office phone +47 46 41 07 22 , home phone +47 67 56 42 58.

E-mail: svein.a.jessen@bi.no

Work Experience

Born in Tana in Finnmark, North-Norway, in 1937, grew up in Tromsø, and after a short military career as leftenant from the Officer School of Infantry, he completed his MSc studies at University of Oslo in 1961. He then took the position as programmer at the French-Norwegian computer company Honeywell-BULL. When he left 4 years later as Head of Systems, this was due to an offer being researcher at The Norwegian Institute of Transport Economy (TØI). 5 years later he left this position to join the shipping company Data-Ship as Director of Research, a position he held for 3 years before he joined the staff of Hartmark-IRAS , later part of PA-International, as business advisor. For some years he was involved in a great variety of business projects, until he was headhunted to be the CEO of NORPLAN as, a consulting company concisting of 18 Norwegain enterprises working worldwide in technical and financial consulting. After 4 years he was offered the position as Vice President for Extended Education at The Norwegian School of Management (BI). 5 years later, after completing his PhD in Project Management at Brunel University in UK (Henley School of Management in cooperation with USC – University of Southern California – in the USA) he was asked to apply for the chair as Professor of Project Management and Leadership at the Norwegian School of Management, a position he has held until he retired from the school May 2007.