

Part Three: Team Management

5. Team Management

From the previous chapter we have seen that Project Leaders (PLs) or Project Managers may have different tasks, in particular whether they are assigned more administrative or more technical rôles. However, apart from their specific tasks, there is one main skill they should have:

Leading people in a team.

Team management is a key for effectiveness and especially efficiency. If the team is irritated or spoiled because of bad management, only very little output can be expected. Rather, the individual members of the team follow their own interests or perhaps fight against each other, or (individually or commonly) against project management. Thus, to streamline the individual interests with the project, and to put the team in a position to actively anticipate (positively) the commonly achieved results is a main factor for motivation.

Though it is possible to stimulate a team using 'psychological means' and to convince team members in particular during special workshops/events, in the long run only a qualified team management, balancing the project requirements with the current state of the team members will yield sustained results. To turn it the other way around:

- Once project management requires and recruits highly skilled people, turning the tables,
- exactly those people will demand a project management which acts professional and takes their requirements seriously.
- Those team members are *Stakeholders* by definition and will impact the results of the project significantly.

Therefore, we will discuss the following general tasks for project management:

- Setting up teams
- Organising the team's work
- Reacting in case of conflicts
- Supervising the team's work

5.1 Setting Up Teams

5.1.1 Organisation of Project Management

After management has made it's mind to start the project, a business plan has been established and the first ideas about a mission statement have been put in paper, and even before a concrete project plan has been worked out, the first impression of

the complexity and the basic requirements of the forthcoming project can be guessed.

After having answers for the basic questions:

- What is the deadline of the project ?
- What budget is required to successfully run the project ?

this should be the starting point to define

- the least (minimal) management structure of the project; and thus how to shoulder the tasks,
- which organisation the project should have, in particular regarding
 - [physically] office spaces and required material (PCs, Notebooks, Servers, Software, etc.),
 - [logistics] project office, and most important
 - [administrative] reporting chains.

These decisions should be mutually carried out with the project managers; if already designated. Of course, during the lifetime of the project these conditions are subject for change. In particular, the PL should be free (and entitled) to appoint certain technical tasks to SPLs.

Reversely, changes in the other aspects during the running project will have an impact on at least the deadline, though it might be necessary to improve the project conditions significantly on demand, in order to meet the required objectives.

5.1.2 The Project Manager

Generally, it is not easy to try to define what somebody makes a 'good' project manager; and how to convince management that you are the one to choose. What is required for project management ?

- [Qualification] The best qualification is practice; once your résumé includes a reference regarding the (successful) leadership in a comparable project, you are fine. For newcomers, certificates in the project management method required/requested for the current job (PMBok/PRINCE2) is a must.
- [Skills/Know-how] Since IT projects are technical driven, expertise in the currently employed techniques is required to master the different tasks.
- [Dedication] Project Management is in the first place risk management. Risks can be mastered successfully only with a certain amount of blood, sweat, and perhaps tears. Only if you are willing to pass those phases, the project will benefit and eventually complete successfully.
- [Loyalty] Upper management has appointed you to realise the expectations of the company; which might not in every phase coincide with the interest of the project. Loyalty has different sinks: Management, team, project tasks. Be aware 'sitting between chairs'.

Be prepared to fulfil several rôles as PL:

- [Leader] You are the manager of your people in charge, the better you do regarding your task, the better they will perform.

- [Guru] A project manager has to have not particular more insight into specific project items, but should have a broader and more coherent view. Thus, your decisions are expected from the team to reflect this; thus anybody finally accepts those.
- [Agent] You are the agent of the company's management fulfilling the tasks of
 - [leading] a team (and reporting as leading staff member),
 - run an [organisation] and realising the projects objectives (defined by sponsors)
- [Yourself] It is important that you don't forget about yourself. Sincerity is a key for authority.

The complementation of [leading] and [organisation] is tentatively shown in figure 12. Of course, while applying for the job as project manager, make up your mind whether [Yourself] fits with [Dedication] and [Loyalty].

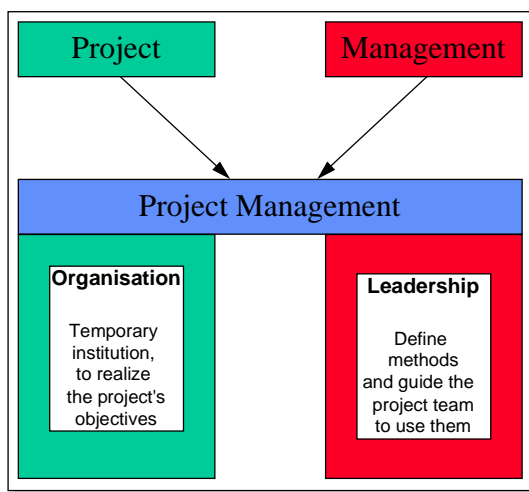


Figure 12: Complementation of Leadership and Organisation in Project Management [~ Litke2007]

On the other side, your interviewer will decide whether your referenced [Qualification] and your [Skills/Know-How] meet the projects requirements. Apart from specific qualifications/skills, for System Engineering IT projects, it is expected that the PL incorporates the following management concept (figure 13):

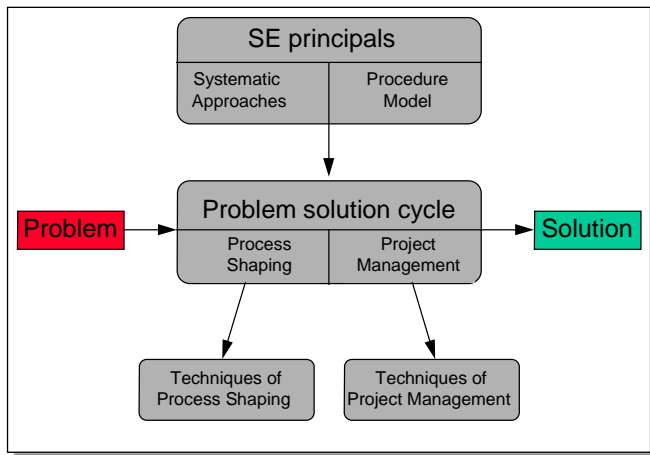


Figure 13: Project Management concept according to System Engineering (SE) principals and guidelines [~ Litke2007]

5.1.3 Leadership models

Any IT project management leadership models have to concern that management takes place in an complex environment, which is determined by (figure 14)

- the PM organisation (already existing to be build)
- the chosen PM methods (see next section),
- the supporting software tools for PM (discussed in the forthcoming chapters), and
- the (human) leadership capability of the PL.

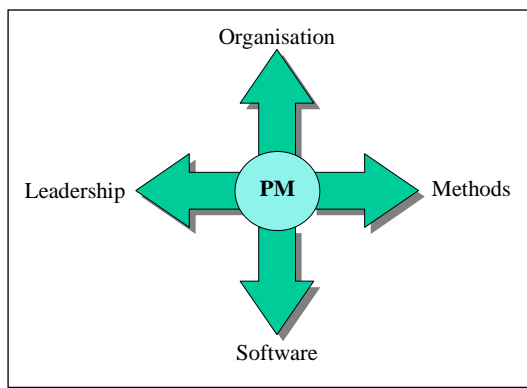


Figure 14: Determinants of Project Management [~ Diethelm2000]

According to our current understanding, the project management leadership model has to obey a **systemic** approach, as laid out in figure 15. Effectively, this is a 'people business' which takes into account

- the different qualifications,
- the cultural impacts (of multi-cultural teams), and
- the individual (human) interaction behaviours of the team members.

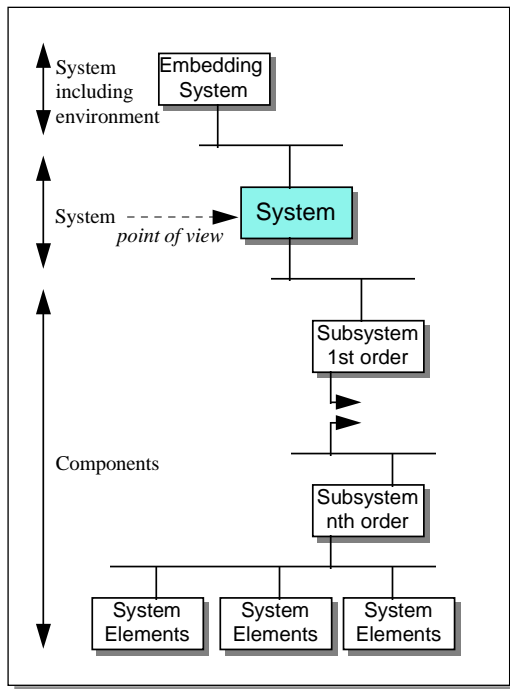


Figure 15: A systemic approach for complex systems [~ Diethelm2000]

5.1.4 Declaring PM methods

We have already realised, that the choice of the project management methods is very often pre-determined by the heritage of the company, or depends on external circumstances and the nature of the project, or perhaps is already defined by the sponsor of the project (DIN 12207, DIN 10006, ISO 15505).

Of course, those models have to be adjusted with the current project and a particular procedure model has to be carried out. This has to be explained to management and sponsors and finally has to be agreed by them.

In addition, it is not only necessary to inform the project members about the chosen procedure model, but in addition to let them participate and to further develop those methods. This participation could be done by means of a kick-off meeting or workshops, which should aim to actually apply the methods so sub-projects and tasks already appointed to the group.

5.1.5 Building a team

The project team will be eventually completed during the first phase of the project and is perhaps subject of substantial changes during the lifetime of the projects.

The interaction of the team members during the project impacts progress and outcome of the different tasks. Project leaders should be aware that in particular a newly build team acts differently according to the level of knowledge between each other [Litke2007]:

1. *Formation phase:*

The group members try to check each other. Since the current environment is still unknown, often the PL is requested.

2. *Conflict phase:*

Self-organised sub-groups are established; one knows about the

qualifications/reactions of each other. Disputes among groups raise and occasionally, even management is questioned.

3. *Normation phase:*

Disputes are settled, friction is reduced, and mutual acceptance is established.

4. *Working phase:*

The power of the team can now focus on tasks. The rôle of the individual team members is fixed and working. Perhaps some members are heading for more challenging tasks.

A qualified team, able to master even complex tasks and reacting coherently and rational in difficult situations, can be characterized by the attributes (figure 16):

- A small group of individuals with complementing skills,
- motivated and driven by a common task,
- willing to achieve the same results,
- while co-operating with engagements, and
- mutual responsibilities.

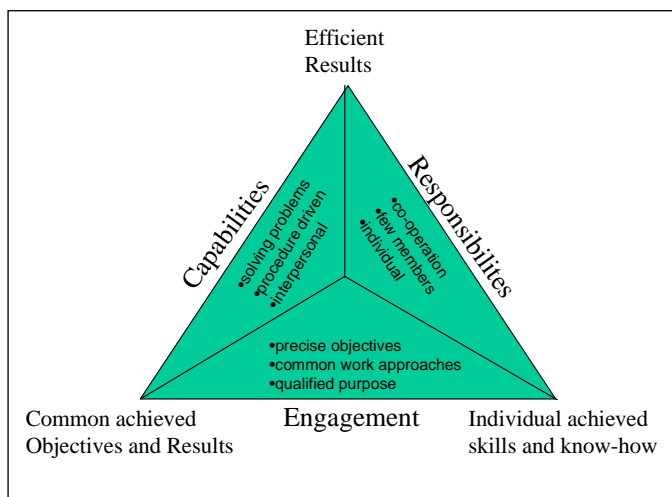


Figure 16: Team building foundations [~ Litke2007]

5.1.6 Delegation

Delegation is a key feature of leadership. During the project, the PL has to delegate some of his/her activities and responsibilities to other project members. Two types of delegations are common:

- **Permanent delegations**
Here, the PL entitles Sub Project Leader (SPL) to fulfil defined (sub-)tasks, mainly as result of a Work Breakdown Structure (WBS). Also, project management can be realised in a team, perhaps in conjunction with project assistance or with a junior project manager.
- **Temporary delegations**
Are used typically for restricted tasks which can be finished in a certain time frame.

In both cases, the PL as to clearly announce the delegations and to officially entitle the project member among the team.

5.1.7 Skills and People CMM levels

In order to asset the skills of project teams, the SEI at Carnegie Mellon has adopted their *Capability Maturity Model* to people (*People CMM Version 2.0*). Scope is not only analyse the current level of maturity (qualification) but rather to allow management to set up programs

- to improve the competence of the individuals,
- to make team-work more effective,
- to motivate team members and to raise their efficiency,
- to organise the groups in order to prepare them for the forthcoming tasks.

According to this model, organisations can be assessed in the following way (figure 17):

1. Initial Level
Undefined process flow, unclear competence's and responsibilities; ritual procedures; team not involved.
2. Managed Level
Members work to hard, personnel objectives are unclear, missing knowledge about solution concepts, restricted communication, bad moral habits.
3. Defined Level
Missing streamlining between groups, thus little synergy. PL is not capable to identify skills of team members and to efficiently incorporate those into the project
4. Predictable Level
Project/Organisation employs skills of all members. PL can predict from the teams involvement the results of the project in terms of quality and deadline.
5. Optimising Level
Management tries to improve continuously the skills of groups and team members by analysing the level 4 achievements.

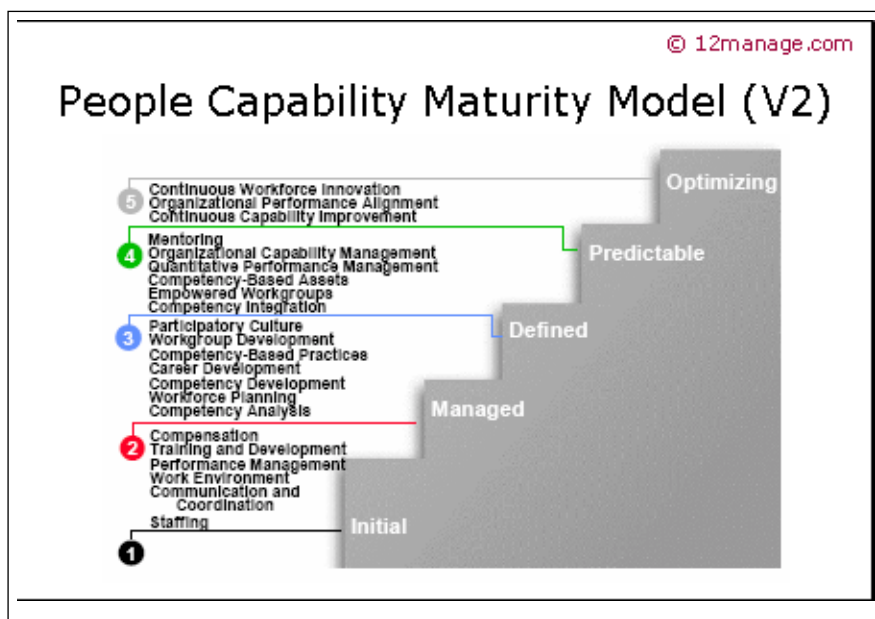


Figure 17: SEI's People Capability Maturity Model [www.12manage.com]

5.2 Organising Teams

5.2.1 Project Office

The Project Office (PO) has already been introduced as

- Center of administrative tasks,
- location of work-flow sheets and perhaps other document, and overall as
- communication Center for the project.

Practical experience shows, that the involvement in the project is related to the distance of a project member's office to it. However, if team members are located to close, their efficiency is getting reduced by the busy PO (or other circumstances).

In addition, the PO should display the master plans regarding the projects or sub-projects progress and perhaps a list of open tasks, a *List of Open Points (LOP)* respectively.

5.2.2 RACI Matrix

Common in projects is to assign certain tasks to persons. Complex tasks however, require the involvement of many people, team members (or externals) respectively. One approach to make the assignment transparent is the use of the so-called RACI matrix (figure 18).

RACI is the acronym for 'Responsible' - 'Accountable' - 'Consulted' - 'Informed':

- **Responsible**
for execution. Master: Person initially required for the execution of the task, everybody else has to report to [Process Owner].
- **Accountable**
for sponsoring. Person providing the budget for the task and required for it's funding [Budget Owner].
- **Consulted**
for additional know-how. Person, which directly impacted by the task/project. In case the task/project depends on him/her, he/she acts as [Supervisor].
- **Informed**
for the current state of the project. Persons, which need to know the results of the project/tasks, maybe because they are [Stakeholders].

	Management	Project Office	Architects	Team A	QA
Definition	A	I	R	I	C
Introduction	I	R	C	I	
Step 1	I	I	C	R	I
Step 2	I	I	C	R	I
Step 2a		I	I	R	I

Figure 18: Typical set-up of a project's RACI matrix

In the RACI approach, persons or organisations are assigned a particular rôle. Apart from the basic RACI approach, there are several variations common:

- RACIS [Supportive]
required for supporting the project/task with particular resources.
- VARISC [Verify] and [Sign Off]
necessary for evaluation and verification of the task and responsible for the final go and roll-out.

5.2.3 Meetings

Every project should have in addition a qualified meeting room, being permanent available and to use easily without the requirement for a long-term scheduling and booking. Here, additional communication facilities (for eg. video conferencing) should be available. Though today's network capabilities makes it possible to use any PC for conferencing; a meeting where people are joined in a common room introduces significantly more 'group dynamic' since it is much harder for anybody to escape.

Apart from the meeting room, the acceptance, results, and efficiency of a meeting depends strongly on the following criterion's:

- The meeting has to be scheduled in time, PO has to make sure, that the meeting is not conflicting with other major tasks.
- A well-prepared agenda has to be circulated which needs to be streamlined with the SPLs.
- A meeting leader has to be assigned (perhaps in a turn-around fashion) and to be made familiar with the agenda and it's objectives in a preparation meeting.
- For the main items, objectives have to be defined and the project team and/or particular members/groups have to be assigned to those.
- It is important that minutes include these objectives in a concise way and reports about the achieved results have to be part of the forthcoming meeting agenda (when they are due).
- Minutes have to be prepared in a standard scheme, they have to be circulated and filed; perhaps with additional comments from the PL and the group members.

Meetings should be clearly organised and treated as important sub-tasks. Otherwise, they will become obsolete, increase the level of frustration, and steal of course project time.

5.2.4 Document Filing

A reliable document filing is necessary to

- increase the efficiency for the internal project communication
- allow sponsors and upper management an un-digested control of the current project's state.

We have already heard about the 'no-goes' in document filing. However, what is the correct approach? Here we have to consider three important ingredients:

- An extensible and hierarchical document location structure.
Documents have to be filed according to subject.

- Adequate document templates.
Allowing an uniform an easy movement in the document.
- A qualified Document Management System (DMS).
Providing automatic revisioning of the document, building up indexes, and allowing different 'views' (by subject, owner, version, topic etc.) of the documents under it's control.

One approach for consistent document filing was developed by IBM is known as **WSDDM Worldwide Solution Design and Delivery Method** (figure 19).

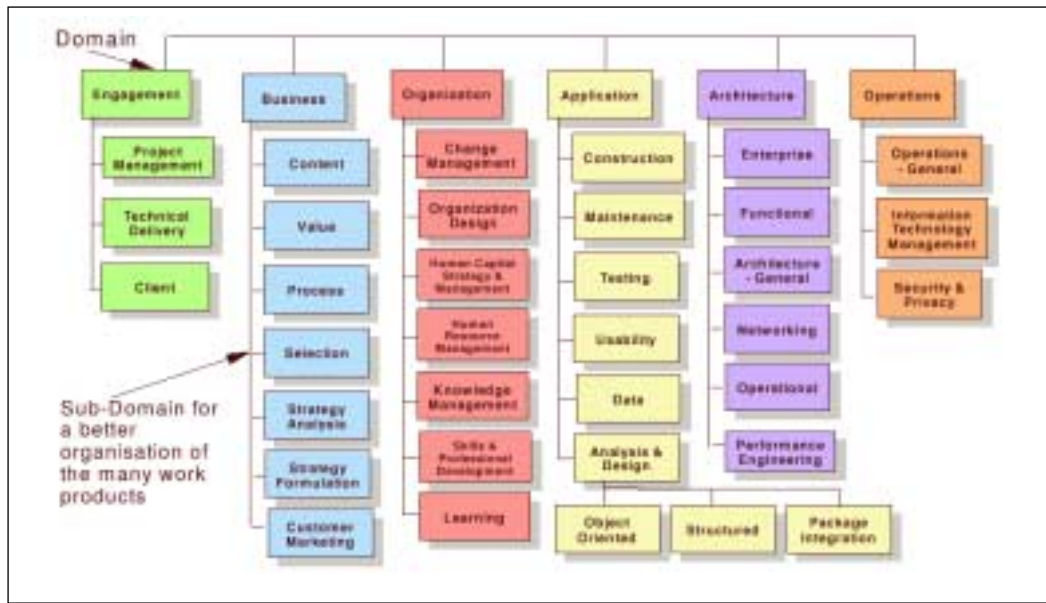


Figure 18: Structure of IBM's WSDDM model [Thomas2004]

Meanwhile there exist several public-domain products for document management, eg. *Tortois* [<http://tortoisesvn.tigris.org/>] which either use a Revision Control Systems (here: *Subversion*) in the background or directly a RDBMS (eg. MySQL).

Another approach is to use a GroupWare solution to allow this document handling. In the case of IBM, the natural choice is *Lotus Notes*. However, in addition public domain solutions (*eGroupWare*) provide at least parts of the required capabilities.

5.3 Running Teams

5.3.1 Conflicts

The sooner, the later, every project runs into a substantial crisis.

We define a crises as substantial deviation from the project plan and objectives in terms of deadline, or completeness, or quality with respect to the experienced or guessed current state.

A crises might originate from a variant of different sources; in particular internally and externally. One important reasons for a crises might be conflicts in the team,

yielding a substantial reduction of productivity. Figure 19 provides a breakdown between the productivity of groups and their cohesiveness:

		Cohesiveness	
		high	low
Performance Norms	high	high productivity	moderate productivity
	low	moderate to low productivity	low productivity

Figure 19: Correlation between group cohesiveness and productivity [Diethelm2004]

5.3.1 Workshops

Workshops are useful in case, the crisis originates from technical or organisational problems. In order to successfully complete the workshop, a script should be prepared defining steps and rôles.

Depending on the foreseen results, the workshop should take place outside the 'work arena' and perhaps off working hours. Since this includes additional attention and efforts from the team members, it has to be prepared with management attention.

5.3.2 Mediation

It might be necessary to ask for support from outside the group, and perhaps involve a mediator. A mediator acts always exceptional and outside all reporting chains, thus the team members should feel free to tell their concerns without any consequences.

Mediation should take place - unlike meetings and workshops - only with the groups or team members in conflict and happen always none-disclosure.

5.3.3 Coaching

In particular for junior project members it might be good idea to organise a 'god father' and to coach those members respectively. Unlike the mediator, the coach is as member of project team familiar with the demands and methods of the project. Depending on the work load the coach could be recruited from a different group.

5.4 Controlling

5.4.1 Confirmations

The sub project leaders (SPLs) have to report directly to the project leader. One of the tasks of the PL is to confirm their reports, to balance the results with the original or modified project plan and to finally accept the work in terms of intermittent mile stones.

Typically, the project is broken down in phases, know as *Work Breakdown Structure (WBS)*. We will later see, that *Gant diagrams* are a typical mean to express phases and dependencies.

5.4.2 Auditing

One mean to improve quality is perform audits on demand or perhaps permanently. For IT (software) projects audits are complementary to QA (Quality Assurance) reports. While the latter focus on reported bugs (defects) according to the test or use cases, auditing actually takes care about the source code itself.

Auditing is required in critical cases. One of those cases is to audit the security impacts of the code and to verify the accepted methods are consistently used. Another requirement may originate from SOX 404 compliance. Again here, the software has to be written in spirit of the law, and it might be necessary to achive compliance by means of a certificate due to an external audit.

5.4.2 Reporting to Management

The Project leader has to prepare (at least) two different standard reports:

- **Progress Reports**
This report has to detail the current state of the project regarding compliance with plan in terms of the achieved objectives and whether and not the residual aims can be reached.
- **Business Report**
Here, the PL has to declare and to explain it's expenditure and to correlate that with the expected and forecasted spending. Here, the PO can play a vital rôle in order to gather the required information:
 - Summing up the team member's time sheets per sub-project and project phase.
 - Provide an overview about other spendings in terms of operational costs, third party royalties and external contractors.

It is obvious to mention, that qualified (and verifiable) reports are import in cases a critical situation of the project is encountered and a

- **Exception Report**
has to be provided, whose purpose is to raise upper management's attention about the project and enable mutual solutions for extraordinary situations.