Basics of Project Management

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IQA-4-Africa

From Pan-African Policy to Practice

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Preliminaries

This is an introductory text to the following screencasts in the cinema of the topic *Basics of Project Management*:

1. Key Characteristics of a Project
2. Chances and Challenges of Project Work
3. Project Goals
4. Project Stakeholders
5. Project Planning
6. Project Management
7. Agile Project Management

The text is not a complete summary of the information given in the screencasts. It can introduce you to the respective topic and help you to remember the key facts later. You can make use of the full potential of the learning material and have the most fruitful learning experience, if you watch the respective screencasts in the cinema and work on the reflective questions, which you find at the end of this document.

Further reading to deepen your knowledge can be found in the bookshelf of the topic *Basics of Project Management*. Material for the transfer from theory into practice, like worksheets, templates etc. can be found in the toolbox of this module.

All material is part of a compendium that was developed for the HAQAA2 Training Course IQA-4-Africa – From Pan African Policy to Practice.

Keywords

project management, project triangle, project planning, SMART rule, stakeholder management, agile project management

Expected Learning Outcomes:

On successful completion of the material *Basics of Project Management*, you should be able to:

- identify a project and explain the difference with routine work,
- define the project scope, set up project priorities and apply the different approaches adapted to your project,
- have developed a set of technical and socio-cultural competences, and applied knowledge, to implement your project and satisfy the stakeholders involved and concerned by the project,
- plan your projects according to the best practices in order to increase the probability of success,
- discuss the importance of integrating agile approaches into project management.

1. Key Characteristics of a Project

Preparing an external accreditation, setting up a new data warehouse, implementing a research study or organising a graduation ceremony: There are numerous activities in higher education institutions that are organised as projects. But what is a project and in how far do projects differ from everyday work?

Unique, target oriented, temporary and limited …

If you search for it, you will find a tremendous plethora of literature and online resources on project management. Definitions and methods discussed in it might vary and sometimes the amount of accessible information can be overwhelming. In the following text, and although there are several recognised international standards (e.g. PMI, Prince2, IPMA), we will not refer to a particular school of thought or philosophy, but will take a pragmatic approach, drawing - among other things - on our own experience in project management. The mentioned variety of definitions also holds true for the definition of projects. However, most schools of thought consider the following elements to be characteristic of projects:

- **Uniqueness.** Every project is unique and innovative. This makes a project different from everyday tasks, which are reoccurring in more or less the same way. Projects are events that will not be repeated in the same form. Of course, project activities may be inspired by similar projects, but even if two projects follow the same goal, the circumstances, time-frame, budget or other aspects will differ.

- **Complexity.** Generally, projects are made up of components that include many and diverse aspects and are sometimes difficult to grasp. They are complex. Since project work differs from everyday work, it always means finding a path on unfamiliar ground. Finally, the complexity of projects is reflected in the specific characteristics of projects (limited time and resources, interdisciplinary teams, new tasks), as will be explained below.

- **Target orientation.** Project activities are *explicitly* oriented towards a specific goal or deliverable, a tangible or non-tangible result. Building on this goal, project activities are planned and the achievement of the project goal marks the end of the project. Of course, routine activities also aim at achieving goals. However, the goal orientation emphasised in the project management literature points to the importance of defining the project goal as precisely as possible in order to be able to plan the necessary steps and the time and resources (see below) accordingly.

- **Time limitation.** Projects are temporary activities. They have a fixed starting point and a fixed ending. When the project goal has been achieved (or when a project closure is decided for various reasons) the project organisation with its staff, processes and equipment will be disbanded or redeployed.

- **Resource limitation**. Usually, projects have a fixed budget that can be spent in the assigned project period. This constraint makes an explicit and rigorous budget planning necessary. Time and resource constraints have an influence on the project scope (see below) and therefore have to be monitored, controlled and balanced throughout the project period.

- **Interdisciplinarity.** Very often, projects cut across organisational lines and structures**.** They involve resources and staff members of different departments and draw from their particular fields of expertise. Competence, motivation, complementarity and interdisciplinarity of human resources are part of the success factors here.

Prof. Dr. Annika

2. Chances and Challenges of Project Work

Creating something useful in an inspiring team

When it comes to project management, the discussion in the literature seems to be focused a little on the challenges one may encounter with projects. This is important, because indeed projects – especially if they involve much money and are of high strategic relevance – can be very challenging and project managers can benefit from many tools that help them to overcome project challenges. However, we would like to begin our text with a more positive perspective and give you at least three reasons, why you should be eager to work in projects:

- **Being useful**: In a project you get the opportunity to contribute to the development of something new and useful, ideally something that could benefit others, your organisation or even the whole world. Imagine that the internet (in its current form with the HTML language implemented in the HTTP protocol) started as a project at the European Organization for Nuclear Research in the 1990's!

- **Being creative**: Projects usually offer space for being creative. They make it possible to unlock unknown potential of staff and organisations as a whole.

- **Establish inspiring collaborations**: Since project work usually means teamwork, it can broaden your horizon by working with inspiring professionals. Depending on the scope of your project, you will get the opportunity to work across organisational or even national borders which provides insight into different organisational or national cultures and will allow you to improve your skills further

Keep balance, remain realistic, get the support of others

We are convinced that being part of or the manager of a project team can be a very satisfying experience. On the other hand, we will not hide the fact that there are definitely some challenges and threats that can turn project work into a very strenuous endeavour. We would like to mention here the four most important ones in our view, in order to encourage you to keep them in mind, when you start working in your next project:

- **Unspecific goals**: Unspecific goals are a major threat to projects that are even more severe, if we deal with external clients who pay us for developing a product. If we have not been specific in jointly defining our goals, we might end up developing something that does not meet the expectations of the client in the end. And that is why it is important to talk about goals and to set them down in writing, so that everyone involved in the project feels the same way. This is the only way that all participants can agree on what the goal is and remember it at the end. Thus, to avoid these problems, objectives must always be SMART (this concept will be developed in the following chapters).

- **Unrealistic ambitions:** It seems to be particularly human to strive for ambitious goals. Especially, if we are not experienced in project work and the new terrain of the project topic, we might set the goals too high to be able to achieve them with existing resources and against the background of the prevailing conditions. It is therefore always advisable to question the project objectives, if necessary with the help of experienced colleagues. The art of goal setting is to combine realism and ambition.

- **Lack of commitment:** Although you know very well about the benefits of your project idea, you might find that potential „power promotors" (see below) do not. Especially in complex organisations, even the client (e.g. the university's management) might lose interest in the project over time. Sometimes you need support from stakeholders, who are not directly

benefitting from your project and project teams are hard to motivate, if they cannot see progress or the big picture. In a nutshell: If you lack the commitment of relevant project stakeholders, you will probably not be able to reach your project goals. Therefore, the project manager needs to invest some energy and a good deal of communication in stakeholder management (see below).

- **Balancing scope, time and money:** In projects, the latter two are usually limited. This is a constant challenge inherent to project work. Since in projects also unforeseen events may take place, a thorough planning and constant monitoring of the activities, the schedule and the money spent is necessary (cf. the magic project triangle below). Thus, the quality and success of a project is defined as the satisfaction of the expectations of the client and/or the university management in terms of the performance of the project, while respecting the allocated budget and schedule.

Good planning and management can keep the aforementioned threats in check and make the challenges manageable. In the following you will be given some hints on how this can be achieved.

3. Project Planning

The intention of project planning is to ensure that all involved people – above all the project manager and her or his team and the client of the project (who at a university may e.g. be the presidents' board, a faculty or an administrative department) – share a common understanding of all relevant cornerstones of the project. Roughly spoken, project planning includes three main tasks: clarify the project goals, define and schedule the respective work packages, and determine the project duration and the steps to go. More than a means of monitoring, good planning is the guiding thread of the project. It allows all project participants to work together in a common effort and a global perspective. That said, project planning is only relevant if it is updated regularly.

Scope, results, benefits and beneficiaries – project goals

You might think that it is self-evident that every project has a defined goal and defined steps to reach that goal. In fact, it happens quite often that the involved project members have more or less different interpretations of the intended outcome or final product of a project. They also might have a different understanding of the prioritisation of different project activities.

Very often, such a confusion results not only in the dissatisfaction of the project team, but also in an extension of the project duration or even the failure of the whole project. To prevent such a situation, the following aspects should be defined as precisely as possible at a very early stage of the project:

- **Project result (output)**: What result do you want to achieve with the project? Is it e.g. the successful passing of an external accreditation, or is it the setting up of a new administrative unit? Or are you developing a tangible product like a handbook? The final deliverables must be well identified and defined.

- **Long-term benefit (outcome)**: What would be possible long-term benefits of your project, that are a consequence of the output being in place? For example, if your desired project output was the foundation of a centre for quality assurance, the long-term benefit might be a professionalisation of quality management procedures at your institution and an

improvement of your practices (teaching, research, management, etc.).

- **Scope**: What are the boundaries of your project? Which tasks will be fulfilled during the project, which ones will be left aside? Will your project take into consideration the whole university or will it focus on one or two pilot faculties?

- **Budget and duration**: Of course, the other two facets of the magic triangle also have to be estimated, defined and monitored, in case they are not fixed by a funding authority.

In the toolbox of this module, you will find a tool that – amongst others – can help you to come up with a comprehensive definition of your project: a template of a powerpoint presentation for a project sketch. This can be very helpful, if you want to present and discuss your project with a client or your team.

In addition to the project objectives, it should also be defined at the beginning of the project who will be involved in the project and in what way. In a later chapter we will focus on this human factor in project work. Let us first take a closer look on structuring your project activities:

WBS, PAP & milestones – work packages and schedule

Do you know, how to eat an elephant? Exactly! It has to be well-cooked and cut into small pieces. This image of eating an elephant can help us to remember that we cannot handle projects as one big entity and a big blurry idea, but that we have to break them down into smaller elements that are easier to handle. The following tools can be very helpful, when planning a project:

- **Work Breakdown Structure (WBS):** The WBS is a hierarchical decomposition of the total scope of work to be carried out by the project team to accomplish the project objectives and create the required deliverables. By the help of a WBS, you can put the elements of your project into a sensible order. It is a simple tree diagramme that helps you to cascade your project tasks into work packages that are easy to handle. It is thus hierarchical and represents the different levels of a project: project, sub-project, work package (and sometimes smaller entities like "activity" or "task"). You find a template for creating a WBS in the toolbox of this module.

- **Schedule/Project Action Plan (PAP):** After you have an idea of the work packages the next step would be to put them in a timely order. The easiest solution to come up with a schedule of your activities is the so-called activity plan, that sometimes is referred to as project action plan or PAP. This tool can be helpful with short time or less complex projects. You simply come up with a chart and answer the questions, when should what be done by whom and with whom? A PAP can be more or less detailed, depending on your needs, the size and type of project, and the strategy adopted, e.g. also include information on budget planning, available resources, etc. Look into the toolbox of this module to find a template. If you are dealing with long-term and more complex projects, you should go for a proper milestone plan that comes in the form of a so-called Gantt chart.

- **Milestones:** In a project, in which specific elements and activities are organised in a particular way, special attention should be paid to the transition between two entities (like activities, work-packages, phases etc.). This can be done by defining milestones, which are significant events in a project that occur at a point in time. These steps can be, for example, start and end dates for project phases, smaller goals in the course of your project, accomplishment of key deliverables, client approvals etc. Milestones have zero duration. They are punctual points of time in your PAP. Ideally, milestones are SMART.

Be SMART!

Being "smart" has a very special meaning in the context of project management. We recommend that you define your project goals according to the SMART rule or SMART logic. This holds true especially for the smaller goals within the course of a project. The SMART logic can help you to describe your goals or milestones in a way that makes it easier to manage your project. SMART is an acronym for the following aspects:

- **S** as in **specific:** It will help you to describe what you want to improve or achieve as specific as possible to avoid misunderstandings in the course of the project.

- **M** as in **measurable**: If you describe your project goals in measurable way, it will help you to track the progress of your project. The leading question here is: How do I know, that an activity is accomplished?

- **A** as in **agreed**: The project objectives should be agreed with all relevant stakeholders, because then there is a greater tendency for them to support your project. Or **A** as **assignable**: It is imperative that one or more persons are clearly identified as being responsible for achieving the goal.

- **R** as in **realistic**: As humans, we have a tendency to want too much or to think too big. The chance that your project will be successful is higher, if you think twice, whether your planned project goals can realistically be achieved with regard to scope, time and budget.

- **T** as in **time-bound**: Time is usually limited in projects. In order to keep your project activities on track, every goal of your project should be assigned a certain point of time, when it should be accomplished.

Please note, that in the literature the acronym SMART sometimes is explained differently (e.g. achievable instead of agreed, relevant instead of realistic), but in the end, all explanations come down to the same content. The first version is attributed to Peter Drucker (1977).

4. People in Projects/Stakeholders

Projects do not exist in isolation. You will always affect others with your project or they will have some sort of influence on your project. These others, the so called stakeholders, may be internal or external to your project. It is important to keep them in mind, when you plan and implement your project.

Promoters and beneficiaries

In the project management literature, we find a huge variety of different roles and functions that we meet in project work. Depending on the school of thought, these roles in a project range from many to few and are defined differently. Generally spoken, we encounter in any case the following roles, when we are working in project according to most schools: the **client**, the **project manager**, the **project team**, the **project sponsor**, the **beneficiaries/addressees** of the project results.

When you plan your project, it is important to keep these roles in mind. For doing so, you can refer to the project sketch part two, which you find in the toolbox of this module.

The influence that the "human factor" has on our projects should not be underestimated. The following list can be helpful to differentiate between different types of influence and to deal with

them accordingly in the context of project planning and project management. We can differentiate between (at least) five different kinds of stakeholders partly based on the promoter model for innovation management (Folkerts 2001, coined by Eberhard Witte in 1997).

- **Power promoters** (cf. Folkerts 2001) have the power to promote or hinder your project. They may for example help you to receive the budget for your project. Usually, these are people with certain functions like a dean or a vice president.

- **Technical promoters** (cf. ibid) The knowledge or capacities of **technical promoters** are necessary to "produce" the project products. These people can be staff of your university or from outside (e.g. an agency).

- **Process promoters** (cf. ibid) are needed to keep the project going. For example, a project manager has to think of the next milestones and remember when to contact whom.

- **Addressees:** The addressees beneficiaries are another very important stakeholder group of your project. These are the people for whom you develop the product or output of your project and who have to use it later.

- **Indirectly affected stakeholders:** Last but not least, you should try to find out if there are some people, physical or corporate, who may be indirectly affected by your project. These people also may promote or hinder your success.

How to deal with conveyors and blockers

In the course of any project, it is the project manager's job to keep an eye on the demands of these stakeholder groups and their influence on the project and to react wisely if necessary. This is called stakeholder management and is most important in larger-scale projects with high strategic relevance. For stakeholder management it will help you to anticipate how these people will act in relation to your project:

- What might be the attitude of these persons towards your project? Are they positive or negative about it?

- Which influence can they have on your project?

- How might they behave concretely in relation to the project?

Stakeholder analysis results in a list of stakeholders and relevant information such as their roles on the project, stakes, expectations, attitudes (their levels of support for the project), and their interest in information about the project. This will give you a clue on how to behave towards them in the course of the project. We recommend that you sort the stakeholders on the one hand to the amount of power they have to influence your project and on the other hand according to the interest they might have in influencing your project. In our screencast, we explain in detail how you should deal with the four different categories of stakeholders that result from this sorting. In addition, if you want to delve deeper into stakeholder analysis, you will find a work sheet in the toolbox of this module.

5. Managing the Course of the Project

When the project planning is finalised and the project has started, the project manager has to observe carefully the course of activities and adapt the plan, in case circumstances change (risks and/or constraints). Amongst others and above all, he or she will now be responsible for managing the project team, monitoring the budget and timeline and managing the project progress and promoting and communicating the project to internal and external stakeholders. As we will discuss questions of communication in our module on change management, we will focus on the first two aspects here.

A team is most often only as good as its leader

As we have mentioned before, project work mostly is team work. Therefore, a project manager is responsible to organise and lead the project team in a way that each individual can unfold his or her best potential. This includes tasks like

- hiring staff and assigning tasks to them,
- providing room and infrastructure for the project team,
- setting up rules for the collaboration,
- and providing the team with all relevant information, motivating the team members and giving feedback.

Apart from that, a good project manager keeps her or his team informed about the overall whole of the project and fosters the dialogue between colleagues of different sub-teams or departments. He or she is responsible for the creation of an anxiety free and error tolerant culture, because it can cause a project to fail, if team members do not dare to admit challenges or delays. The manager must be an orchestra conductor. If you are interested in new approaches to team collaboration, have a look at the screencast on agile project management.

The magic project triangle

Part of project management is to monitor the expenditures and project progress continuously. This monitoring will provide the project manager with information on which he or she can base decisions. If, for example, I as a project manager can see from my project reporting, that some work packages are delayed, I will have to take the decision to adapt the schedule, to inform respective stakeholders etc.

The "magic" project triangle is a well-known image when it comes to project management (cf. Fischer 2008, 71). A project can be defined – amongst others (see screencast no. 1) – by three main constraints: scope, money and time. The latter two usually are limited. This constellation may lead to a difficult situation, if unforeseen things happen in the course of the project, hence the need to manage risks.

What happens if, for example, additional work has to be accomplished in your project, which has not been factored in from the beginning? Here, you have three choices that follow the so called "pick-any-two principle". This means that each of the constraints cannot be altered without affecting at least one of the others:

- You either can spend more money (e.g. hire someone, who can do the additional work). In this case, scope and time remain stable.
- Or you can extend the project duration, with scope and budget remaining unchanged.

- If these two options are not available, because money and time are strictly limited, you have to compromise scope or quality of the project.

The main challenge for a project manager is thus to keep the magic project triangle balanced. He or she is responsible to reach the project goal in the desired scope or quality within the limits of estimated costs and deadlines. A well-known saying amongst project managers is: "You can have it good, cheap or fast. Pick any two." (author unknown).

Jack of all trades – the project manager

To sum it up, the aforementioned elements of project management lead us to some qualifications a project manager should have or acquire. Apart from expert knowledge in the area the project is dealing with, the project manager needs the skill to apply certain methods and tools of management in order to manage the project. A certain degree of business skills cannot do harm, because in the end the project manager can be held responsible for the use of funds in the course of the project. Apart from these hard skills, soft skills are equally - at times even more - important. For example, a project manager needs a certain amount of creativity and flexibility to come up with unplanned solutions in case of unforeseen changes in the course of the project. Since the project manager will have to deal with persons, who have different hierarchical states, who have different needs and wishes, he or she needs to be able to communicate and negotiate appropriately with these stakeholders. Here, also the ability to handle conflicts is necessary. Thus, he or she needs a certain degree of outspokenness and, of course, the general willingness to work in a team.

6. Agile Project Management

So far we have dealt with elements of various traditional approaches to project management to cover the absolute basics and make you fit for your own projects. Finally, for those who already have experience in project management or who are interested in modern approaches, we would like to take a brief look at agile project management and at least provide some catchwords on the topic.

Good old project management

Traditional approaches to project management are often classified by the importance of a clear definition of goals: The scope is the driving force behind all project management activities, closely linked to the calculation of costs and time. We are convinced that for many projects it is necessary and helpful to plan milestones and try to anticipate further developments. A comprehensive project sketch and a thorough project plan can make it easy to manage a project. However, there might be situations when it is better to leave the schedule behind and where following the plan very strictly (which may seem too rigid) may just cause the problems we actually wanted to avoid by our management activities.

Nice new agility

Especially in the field of software development, project managers in the early 21st century noticed that a rigid structure and path is not really suitable for their project work in the software

industry. In 2001, some of them agreed upon a document known as the **agile manifesto**, which today has become influential also for projects outside the area of software development. In the manifesto, the signatories declared that of course you should not forget about processes and tools, but above all, you should keep in mind the importance of each individual in your project team and of interactions within the team and with many other people. The agile manifesto includes the following four maxims:

- Individuals and interactions over processes and tools
- Working software over comprehensive documentation
- Customer collaboration over contract negotiation
- Responding to change over following a plan (Beck et al. 2001)

Please note that the authors do not claim that documentation and processes etc. are bad per se, but they say that they value other aspects (namely those on the left) more.

Thus, agile lives in the unpredictable zone. Agile project management represents a fundamental shift away from the traditional plan-driven project management approach by adopting a more experimental and adaptive approach to managing projects.

We do not know much; why planning?

According to the agile philosophy, the basic assumption at the beginning of a project is: We do not know very much yet. The client and we ourselves both learn in the course of the project. Therefore, it does not make sense to do too much detailed planning up-front. Changes can come by the client (priority changes, requirement changes), or by the team (re-estimations of time and requirements) or from outside (resource availability, other dependencies from outside). In a nutshell, agile project management is a way to adapt quickly to changes while simultaneously trying to satisfy the client as well as possible.

Meet for a sprint? – agile methods and tools

Agile projects very often operate with very short development cycles called sprints. Some agile methods like SCRUM suggest that in addition you have a very short daily stand-up meeting with your team so that everybody knows very well what is going on in the project without any additional reports and long meetings. Usually, agile project work also changes the role of the project team who usually takes over the task of a traditional project manager as a group, sometimes guided and supported by a person called „SCRUM master" or agile coach.

If you are interested in new approaches of team collaboration and innovative project work, we recommend that you educate yourself further in the topic of agile project management. A first step towards this could be watching our introductory screencast on agile project management.

7. Reflective Questions
What do you think?

- How have you managed projects so far? Have you used the tools and methods covered in this material?

- What advantages and disadvantages do you see in using the tools and procedures (project outline, WBS, PAP) etc. provided with this material to implement your own projects?
- If you think of your experiences with projects in your institution so far or if you look at future projects: Which factors (soft and hard skills) have contributed to the success or failure of past projects? What might be the main challenges for the project in your institutional context?
- What organisational, group, individual, and project factors do you think would promote the successful adoption of Agile project management methodologies? Why?

8. References

And recommendations for further reading

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