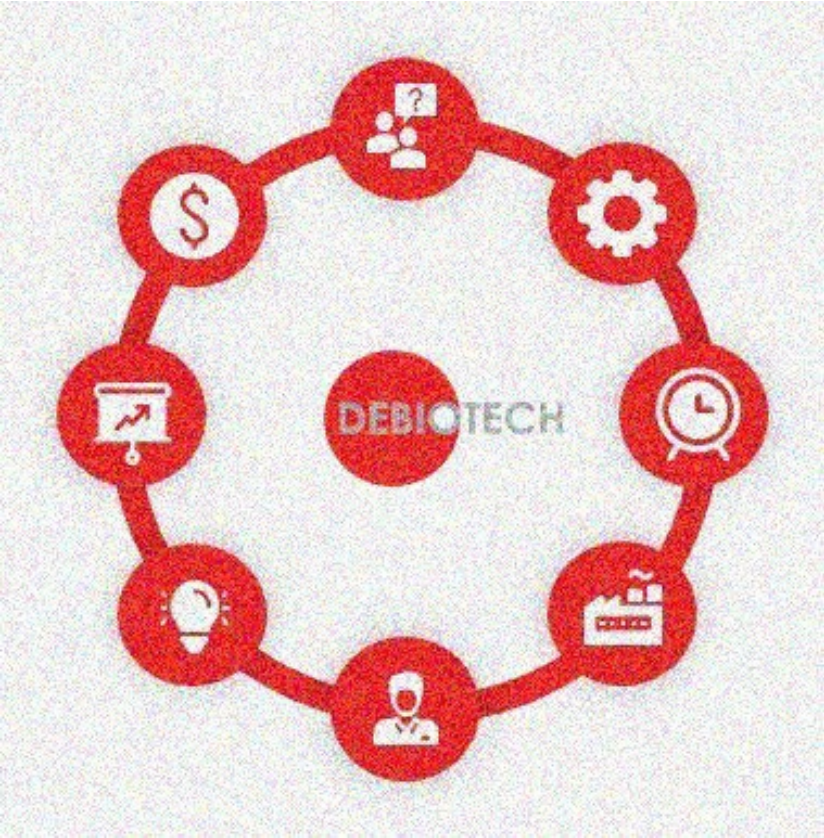
Good practices in Transverse Project Management



1. Goal of this publication

The goal of this publication is to help you in your transversal project management activities. Transversal project management is not a straightforward task involving a single individual; it is indeed a set of numerous and complex tasks with multiple stakeholders involved from different departments and organizations.

2. Targeted audience

The information gathered in this publication should be particularly useful for:

- C-Level executives,
- Project Managers,
- Quality Managers.

3. Table of content

4. Introduction to transverse project management activities

4.1. What is a project?

A project is a temporary individual or collaborative effort to create value or to reach a specific outcome. A project is limited in time, it has a beginning and an end.

A project can involve a single individual and limited financial resources or involve thousands of collaborators and results in costly deliverables. The bigger the project is, the higher the added value of proper project planning and execution.

Projects are triggered by strategic plans defined by the Sponsor team as illustrated in the next figure.

4.2. What is a transverse project ?

A transverse project is a project that requires for its execution the involvement of multiple functions, departments, and management practices. Transverse project management goes beyond traditional top-down approaches to encompass different hierarchies and functions.

A transverse project can also be called a cross-functional project.

5. Entities involved in transversal project management

To allow proper planning and execution of your transverse project, you should carefully define the different entities that will be involved throughout the project lifecycle. Those entities and their relationships are illustrated in the next figure.

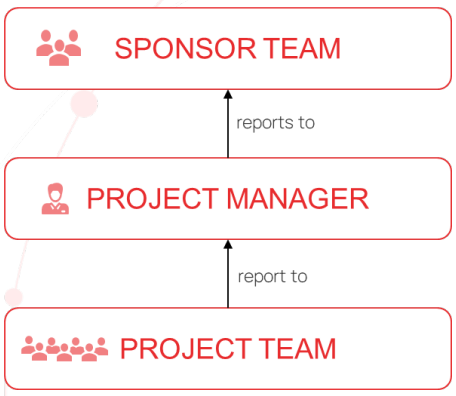


Figure 1. Project entities

5.1. Sponsor team

The sponsor team consists of a group of stakeholders, who are usually experienced and high-level executives or advisors that will periodically meet with the project manager and some members of the project team to ensure proper planning and execution and to free the necessary budget at the different project phases. By considering the strategic plans behind the projects, the sponsor team checks the alignment of the object with the strategic objectives.

Depending on the size and timeline of the project, the sponsor could be limited to a single individual (usually the CEO or COO of the company) or could include tens of people with various expertise and potentially external to the organization supporting the project.
The responsibility of the sponsor team usually integrates:

- Decision to initiate the project in relation to the strategic plans of the performing organization,
- Validate the project scope,
- Assignment of the project manager,
- Validation of the different project phases and the associated timelines,
- Validation of the financing of the project,
- Validation of assignment of human resources to this project,
- Strategic alignment with all company department,
- High-level control of the project execution,
- Official project closing.

5.2. Project manager

5.2.1. Project manager responsibilities

The project manager (PM) is the person responsible of its proper planning and execution. His exact role may vary depending on the project scope and complexity.

He or she is responsible:

- To apply project management processes in compliance with the organization rules, the standard operation procedures of the quality management system and with regulatory requirements,
- To ensure the project scope is well defined and validated by the sponsor team,

- To develop detailed project planning, identify necessary resources and associated timelines, and to provide a detailed and complete definition of the expected deliverables and of their quality,
- To identify the critical path of the project execution and to coordinate the work of the members of the project team,
- To perform periodic project meeting, to animate the project team and to coordinate its activities,
- To report periodically to the sponsor of the project,
- To foresee and anticipate project difficulties that could impact deliverables quality or project planning.

A PM shall be a facilitator committed to the success of his/her project that monitors and cheers the team on as project deliverables are completed in time and ensures that any obstacles met are overcome. The PM is the surrogate for the stakeholders and the scapegoat when problems arise.

The strength of the team, level of executive support and adequacy of funding can never compensate for a weak project management. However, a strong project manager can push a project towards success even if the team falters, executive support wavers or funding is threatened.

5.2.2. Criteria to select a project manager

A good PM may not have advanced subject matter expertise in specific project activities. If the PM has too much at stake in the project, his/her objectivity can be threatened. In a large project, advanced expertise is often provided by sub-project managers who are charged with overseeing specific parts of the overall project. In some organizations fulltime PMs have no responsibilities outside of the leading of a project or they are contractors who provide their services on a project basis. In fact, fulltime PM is a growing activity.

When choosing a PM, some criteria to consider include:

- Experience in managing projects,
- Mastery of the project management process and tools,
- Knowledge in the domain to be able to determine what are the critical activities or steps.
- Ability to dedicate the time necessary for project success,
- Attention to detail,
- Obsession with achieving objectives on-time and on-budget,

- Ability to communicate, orally and in writing,
- Skills and experience in managing and influencing people including those who are not direct reports,
- Ability to juggle multiple responsibilities and to work under stress,
- Flexibility – Tenacity – Patience.

Choosing the right PM is essential to project success. A good and wise choose can dramatically improve the chances that your next project will come in on-time, on-budget and with the anticipated results.

5.3. Project team

The project team is the set of individuals involved in the planning, execution, control and closing of a project. It integrated individuals with different skills and know-how from different department and potentially from different organizations. For large projects, a project team can have a complex structure with multiple hierarchical levels and sub-project teams. However, each member of the project team reports directly or indirectly to the PM.

5.4. Transverse project and organogram

As described above, a transverse project involves individuals from different departments and the PM must coordinate their work. In top-down or hierarchical organizations, as illustrated in the figure here below, it is often not straightforward as PMs are rarely top-level executives and therefore do not have official management responsibilities on each member of the project team.

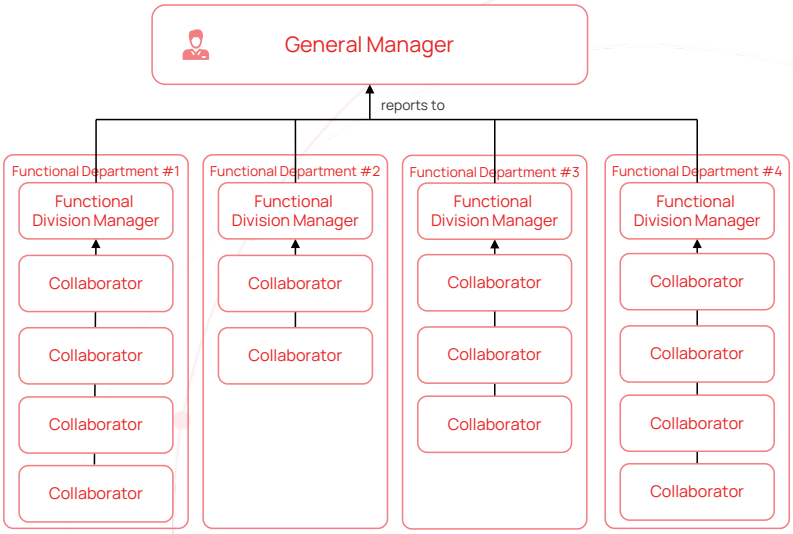


Figure 2. Hierarchical organogram

It is also frequent that some members of the project team report to someone who is not involved in this specific project. This represents potential difficulties for the member of the project team or for the PM. In these situations, PMs and department or team heads must ensure their strategical goals are aligned and they share common objectives. This is usually reinforced by the implication of the sponsor in the project.

A way to reduce the risk of misalignment of strategic goals within the organization is to clearly differentiate the departments of the company within the organogram and to create a Project Management Office department. The PMs are part of this PMO, the head of the PMO ensure that priorities among projects are well defined, communicated and understood by the different department heads.

The members of the project team must be identified and their allocation to each project shall be defined by the PM and validated by the sponsor. This allows department heads to have a management aligned with the company priorities.

An illustration of possible company organogram to support such project management organization is provided in the next figure. This type of organization is usually called a matrix organization.

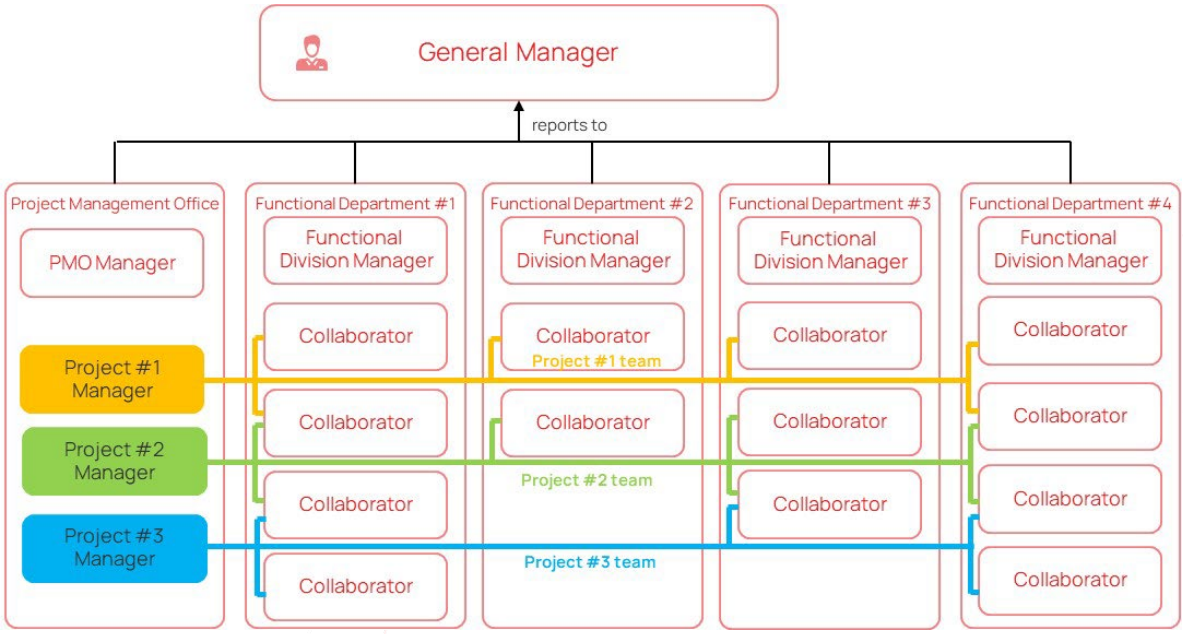


Figure 3. Matrix organogram

6. Periodic meetings

During your project execution multiple meetings must be performed periodically.

6.1. Sponsor meetings

The sponsor meeting shall have a period longer than the project team meeting (for example every 2 months) and allow performing high-level review of the project advancement, with a special focus on project challenges and risks to help the PM to identify alternative solutions.

6.2. Project team meetings

The project team meetings shall have a short periodicity (every week or every 2 weeks) and allow rapid identification of project execution challenges or eventual delays. It is the opportunity for everyone involved in the project to report achievements but more importantly problems and delays to obtain support from the other project team members and update the planning when necessary. In case of an emergency related to a problem to get a critical deliverable, the frequency of the project meetings can be increased, up to daily meetings if needed.

6.3. Department meetings

The department meetings do not focus on a specific project but on all the projects and activities of this specific department. It is the time to review that despite the multiple projects and activities there is no overload or lack of resources for this department. Depending on the department, its size and its activities, the periodicity can be daily or weekly or even longer in specific cases. In software development, daily but short department meetings are usually handled to deploy an agile methodology and adapt tasks assignment in function of the situation.

6.4. Project Management Office team meetings

For medium or large organizations, multiple projects are often executed in parallel. It is important in this context to ensure that all PMs follow the same rules and processes and that the priorities and resources assigned to each project are clear, understood and accepted by all PMs. This is the role and responsibility of the PMO and of their periodic meetings.

7. Project management methodologies

Multiple project and software project management methodologies exist. There is no ideal solution, and those methodologies should be understood to fit with your needs at the different stages of your development.

The commonly used project and software project management methodologies include:

- Agile methodology focusing on short term deliverables,
- Kanban methodology focusing on the optimization of the workflow,
- Waterfall methodology focusing on software development activities planning and their sequence
- V cycle methodology focusing on development activities planning, their sequence and on a controlled iterative approach,
- Scrum methodology focusing on short term deliverables and daily meetings to share experience and difficulties
- Critical Path Method relying on task planning and focus on tasks that are on the critical path (the ones that would have a direct impact on the project timing if delayed or if not achieved on time).
- Lean Project Management focusing on maximizing value and minimizing waste at all steps through continuous improvement of the processes for product and task delivery.
- Six Sigma Methodology focusing on financial returns of projects and encouraging decision making based on data.

8. Phases & activities associated to project management

Regardless of the project management methodology used, the following phases and activities can be applied. However, depending on the methodology, the effort put on each phase will change drastically. In the next chapters, we will describe the phases and activities as defined by the Project Management Professional certification (PMP Certification | PMI).

8.1. Phases of project management activities

Typical phases involved in project management include:

- **Project initiation**: During this phase, you must establish why you are doing the project and what business value it will bring. This would allow you to

secure buy-in from key stakeholders. Expected deliverables and their quality (premium vs low cost) can be pre-defined within this phase. The expected delivery date or the available resources can also be pre-defined here, even if they will be reviewed in detail in the planning phase.

- **Planning**: in this phase, the project manager works with the project team to create the technical design, task list, resource plan, communications plan, budget, and initial schedule for the project and establishes the roles and responsibilities of the project team and its stakeholders.
- **Execution**: during the execution phase, the involved activities include start project development work, manage workflow for all project tasks, manage issues, manage project and sometime product risks, manage change orders, communicate with all stakeholders, verify milestones, and conduct gateway reviews.
- **Monitoring and controlling**: this phase is performed at in parallel of the execution phase and allows to control project advancements, to report key performance indicators, to monitor and verify the impact of change requests, to keep track of the scope of the project and to control costs, quality and risks. This will allow you to generate key data to facilitate communication with all stakeholders.
- **Closing**: during this phase, the deliverables are transferred to the project customer, the project completion is confirmed, the contracts and documentation are reviewed to ensure compliant completion, the resources are released, and the documentation is archived. Finally, the most important step: Celebration of the project end!

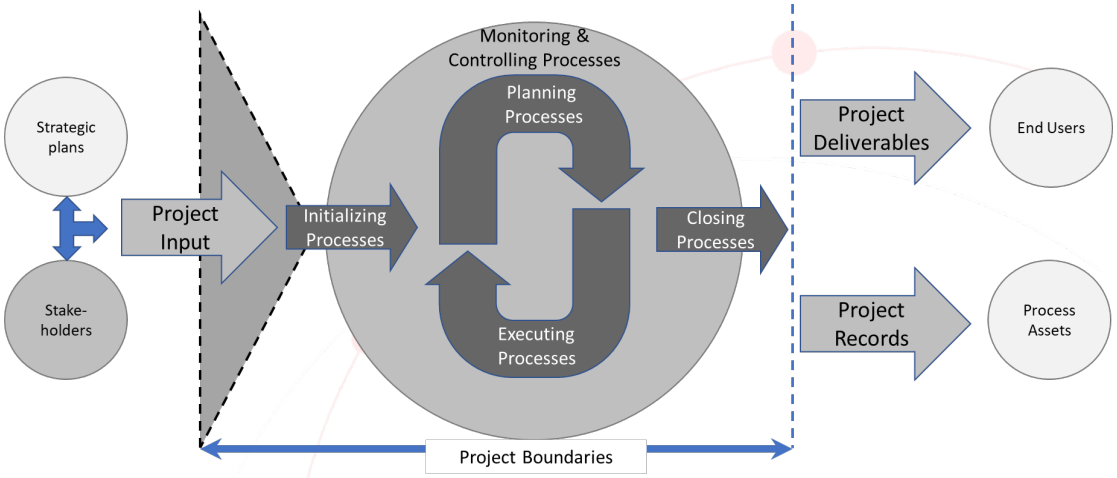


Figure 4. Project management activities

8.2. Activities

Multiple activities are necessary for proper project management. Each of these activities can be active in one, multiple or all project phases. The activities/knowledge areas defined by the PMP include:

- **Project Integration Management**: aims at helping the team to work together seamlessly and to develop a cohesive strategy. It usually allows to identify trade-offs to be made.
- **Project Scope Management**: defines what goes into a project, what defines success and therefore detailed specifications of the deliverables.
- **Project Time Management**: involves analyzing and developing a schedule and timeline for project completion.
- **Project Cost Management**: involves estimating, allocating and controlling project costs.
- **Project Quality Management**: involves measurement of the quality of all the activities performed and deliverables developed as well as the management of corrective actions until the desired quality is achieved.
- **Project Human Resources Management**: consists in organizing, managing, animating, and leading a project team.
- **Project Communications Management**: consists in ensuring timely and appropriate planning, collection, creation, distribution, storage, retrieval, management, control, monitoring, and disposition of project information.
- **Project Risk Management**: consists in identifying, analyzing, and responding to any risk that arises over the life cycle of the project. Risks are foreseen before the damage happens and risk control measures are established in advanced to allow timely respond to critical situations.
- **Project Procurement Management**: it consists in planning, selecting, administering, and closing procurements.

8.3. Process map

The PMP methodology defines a process map that describe in detail the processes that are involved at each phase for each knowledge areas/activities. It provides a good high-level picture of the processes necessary in project management.

Knowledge Areas	Project Management Process Groups				
	Initiating Process Group	Planning Process Group	Executing Process Group	Monitoring and Controlling Process Group	Closing Process Group
4. Project Integration Management	4.1 Develop Project Charter	4.2 Develop Project Management Plan	4.3 Direct and Manage Project Work	4.4 Monitor and Control Project Work 4.5 Perform Integrated Change Control	4.6 Close Project or Phase
5. Project Scope Management		5.1 Plan Scope Management 5.2 Collect Requirements 5.3 Define Scope 5.4 Create WBS		5.5 Validate Scope 5.6 Control Scope	
6. Project Time Management		6.1 Plan Schedule Management 6.2 Define Activities 6.3 Sequence Activities 6.4 Estimate Activity Resources 6.5 Estimate Activity Durations 6.6 Develop Schedule		6.7 Control Schedule	
7. Project Cost Management		7.1 Plan Cost Management 7.2 Estimate Costs 7.3 Determine Budget		7.4 Control Costs	
8. Project Quality Management		8.1 Plan Quality Management	8.2 Perform Quality Assurance	8.3 Control Quality	
9. Project Human Resource Management		9.1 Plan Human Resource Management	9.2 Acquire Project Team 9.3 Develop Project Team 9.4 Manage Project Team		
10. Project Communications Management		10.1 Plan Communications Management	10.2 Manage Communications	10.3 Control Communications	
11. Project Risk Management		11.1 Plan Risk Management 11.2 Identify Risks 11.3 Perform Qualitative Risk Analysis 11.4 Perform Quantitative Risk Analysis 11.5 Plan Risk Responses		11.6 Control Risks	
12. Project Procurement Management		12.1 Plan Procurement Management	12.2 Conduct Procurements	12.3 Control Procurements	12.4 Close Procurements
13. Project Stakeholder Management	13.1 Identify Stakeholders	13.2 Plan Stakeholder Management	13.3 Manage Stakeholder Engagement	13.4 Control Stakeholder Engagement	

Figure 5. PMP Process map

8.4. Some critical processes

8.4.1. Collect requirements & Define Scope

Project scope definition is often underestimated. It is usually a challenging step as it is the base on which your project plan will be created. But when defining the scope of your project you need to ensure that you collected the requirements from all stakeholders. It is really a challenging process, especially with complex stakeholder structures. For example, in medical device industry, the stakeholders usually include the sponsor of the project, the final user, a physician but also all his/her support team: the nurses, the engineering team of the clinical center, but as well the patient and sometime the patient relatives. For complex technical aspects, it is also suggested to include technical experts within the stakeholders to ensure some aspects are properly considered and impossible performances are not inserted within the requirements.

As stakeholders may include high-level executives or physicians, it is usually practical for the PM to organize meetings with each one of them independently to write down their requirements. Then the PM can check there is no contrary requirements, document properly all those items and finally organize a stakeholder meeting to review and validate requirements with all stakeholders. Within complex stakeholders structure this process can take several months and may delay the project execution.

8.4.2. Define & Update project Timelines, resources & budget

Based on the project scope, the PM can then define, often in collaboration with some people of the project team, a list of work items and their deliverables, in a so-called work breakdown structure. Then the time required to execute each task and get all the deliverables can be estimated in association with a resource allocation. This estimation results in a feasible timeline for the development of the project's deliverables and the definition of the associated required resources. Those resources shall include a complete list of required materials and their specifications as well as a list of necessary collaborator profiles and the time they should spend on the different work items. It is important to establish a realistic timeline considering holidays and not expecting collaborators to be at 100% for 6 months or more.

Once the timeline defined and the required resources identified it is then possible to define the project budget.

The timeline, the associated resources and the budget shall be reviewed and validated by the sponsor team, not with the objective to challenge the established timeline or budget but with the objective to ensure that they understand what is necessary for this project and are ready to make those resources available to the PM. However, the sponsor team usually include experienced PMs that can provide interesting review on the timeline, associated resources, or budget. It is the responsibility of the PM to be open to modifications but to challenge them to ensure they are reasonable.

For the critical tasks and deliverables, a risk assessment is suitable to identify the potential threads that could delay them or impact their scope. The outcome of this assessment should be a set of backup plans and their impact on the execution of the project. This activity will be described in detail in section 8.4.4.

8.4.3. Control timeline and budget

Once the timeline, resources and budget are validated, this information shall be maintained up to date during the execution of the project. To do so, it is necessary to frequently monitor the expenses of budget, the acquisition of materials and the time spent by the members of the project team. Time reporting tools are often of high added value to do this type of monitoring.

If significative deviations between the planning and the monitoring are identified, the PM shall investigate the root cause of those deviations, see if they can be corrected or if the planning (timeline, resources, and budget) shall be updated accordingly. When needed, the backup plans shall be activated under the approval of the sponsor team. It is not rare to see project planning updated during the execution of a project, however the PM will gain important recognition and significant support from the sponsor team if he/she manages to keep project planning close to the initial planning. In addition, project planning is usually associated with critical marketing deadlines, as for example the presentation to a yearly congress, and small delays in the project execution can quickly lead to a 1-year delay in marketing and sales activities. Finally, frequent planning updates might be the sign of insufficient quality and level of details of the initial planning.

To perform this monitoring of used resources and budget the PM shall work in close collaboration with the human resources, the accounting, and the purchasing department of the company.

8.4.4. Identify project risks & define control measures

A project risk is an uncertain event that may or may not occur during a project. Contrary to our everyday idea, a project risk could have either a negative or a positive effect on progress towards project objectives.

Depending on the size of the project and the field of application, risk management activities can be of various importance. It is also important to distinguish project risk management and product or service risk management.

For specific domains of applications as the medical device industry, the pharma industry, the financial industry, or some industries related to dangerous substances and processes the product or service risk management activities are of key importance and might be heavily regulated.

However, for any project, project risk management activities should bring significant efficiency in damage prevention and recovery. The goal of this activity is to identify early in the project planning, the risks associated with the project and identify risk control measure (preventive actions) or damage recovery solutions (corrective actions). This way when a risk happens, the PM will already have an approved solution to handle this situation. Typical project risks include but are not limited to:

- Human resources risk: required resources are not available on time for the project execution. Depending on the strategical priority of the project and the available financial resources to overcome this issue, various preventive and corrective actions can be identified.
- Purchasing risks: critical suppliers are not identified on time, the delivery time is not respected, the quality of the purchase is not matching with expectations.
- Financial risks: for international long-term projects, it is frequent to see variations of local currencies impacting the project budget. Unavailability of financing for project execution is also a potential risk.
- Natural risks: as for example earthquakes, tsunamis, fires, water limitations, excessive temperatures, … They may have drastic impact, could destroy project sites and can be very hard to predict. However, choosing project

sites with lower probabilities of natural events is a simple and efficient preventive action.

- Competitive risks: secret projects from competitors are identified in the course of the project and they might lead to a necessary redefinition of the project scope, communication or delivery time.
- Cost risks: the cost can be a financial cost or even a time-based one. A risk could be due to the budget being too tight or the project taking too long to complete.
- Schedule risks: the schedule is an important factor that affects the project's success. A risk could be due to the lack of resources, a lack of quality work, or even miscommunication between parties involved in the project.
- Performance risks: performance issues are what keep projects from being successful. Performance includes everything from how well it performs in terms of speed and accuracy to how well it's received by its target audience.

8.4.5. Conclusion

As you can see the management of a project is not an exact science. It requires skilled people and their knowledge of a set of tools. It also requires a well-defined organization within the company in order to facilitate the allocation of resources and the definition of the basic processes involved in the project management.
Debiotech has an experience over 30 years for managing transversal project within large organizations. Do not hesitate to contact us for getting our support.

9. Authors

This publication has been written and reviewed by:

Rémi Charrier
Business Development Director
r.charrier@debiotech.com

Stephan Proennecke
Project Manager
s.proennecke@debiotech.com

10. Next steps

Debiotech is glad to have the opportunity to share its knowledge with innovative companies. Your feedbacks on this publication are welcome and will be used to update it or to create new publications on topics you care about.

Continue your education by:

- Accessing Debiotech historic publications: https://www.debiotech.com/news-grid/
- Following Debiotech on LinkedIn to be notified on new publications: https://www.linkedin.com/company/debiotech-sa
- Contacting us to ask a question or request personalized support: contact@debiotech.com

Debiotech would be proud to be your partner and support you with:

- Medical device design & development services:
  - Software: Digital Health, Firmware, Embedded, SaMD
  - Electronics: Design, Verification and Validation
  - Mechanics: Design for micro-fabrication & fluidics systems
  - Supply chain development and optimization

- Support in medical innovation management:
  - Market analysis and segmentation
  - IP management
  - Business plan consolidation
  - Partnership development