POLITECNICO DI TORINO

Master's Degree in Engineering and Management

Master's Degree Thesis

Change Management in the Implementation of PMO
An IT Company Case Study

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We say that since change is inevitable, we should direct the change
Rather than simply continue to go through the change.
- Gil Scott Heron

Abstract

The thesis will be centred on the implementation of the Project Management Office in the Operations department of a small-sized IT Company through a Change Management Model.

To begin, a literature review of the Project Management fundamentals and the Change Management approach will be presented. Simultaneously there will be an in depth discussion of the most widespread Change Management Models.

Subsequently, out of an *as-is* analysis of the Operations department of the Organization, the observed criticalities will be addressed through a redesign the main processes. The *to-be* scenario will include the Project Management Office among the actors and a new set of tools and software that endeavour to support each phase of the projects lifecycle.

In order to shift from the existing procedure to the desired scenario, a strategy that encompasses both the technical side of the Project Management Office implementation and the individual change will be shared. The former is addressed through the up-front planning and scheduling of activities mainly aimed at configuring the affected tools and software; while, the latter deals with the implementation of a tailored framework based on the ADKAR Model and the Agile Methodology principles.

The integration between the two sides of the change is constantly guaranteed as a result of the joint activities and the high degree of flexibility, which stem from the framework of the individual change.

Subsequently, taking into account the period between the kick-off meeting and the planned halfway point of transition, the monitoring over the Project Management Office implementation will be provided.

Lastly, a retrospective analysis is conducted with respect to the state of the transition and the suggested next steps forward will be provided.

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Chapter 1

Introduction

1.1 Introduction to Project Management

A project can be described as a temporary enterprise effort with the aim of creating a unique product, service or result. It is temporary since it has a definite beginning and end, reached when the predetermined objectives are achieved or when it is ascertained that they cannot be met, or when there is not anymore the necessity to achieve them. The outcome of a project could be either tangible, such as a material object, or intangible, such as the development of a web service. Different projects could share similar characteristics in terms of deliverables and activities, however each project can be considered unique. A project work could be carried out by a single person, a team, an organizational unit, a company or multiple companies.
It is clear that the definition of a project is very broad and includes a wide range of activities that could be performed; project management aims to provide to the people who are leading a project (project managers) specific knowledge, tools, skills and techniques in order to accomplish the objective in scope, in compliance with predetermined constraints (typically time, cost and quality).
There are 47 project management processes that could be undertaken throughout the project lifetime. Those 47 processes are grouped into five Process Groups:

- Initiating
- Planning
- Executing
- Monitoring and Controlling
- Closing

The project manager is the person appointed by the performing organization responsible for achieving the project objectives, leading the project team through the five Process Groups. Project Management is a strategic discipline, therefore project managers act as a link between the organizational strategy and the team. The wide set of competencies required to perform the job of a project manager make the application of the knowledge, tools and techniques often insufficient for effective project management. In order to properly deliver a project, PMs are required to have an extensive understanding of project managements techniques (knowledge), the ability to apply the techniques (performance) and a sufficient set of interpersonal skills in order to correctly behave throughout project lifetime (personal).

1.1.1 Organizations and Project Management

Projects take place within organizations which are managed and structured in different ways according many factors, such as the industry and the strategic choices. Different kinds of organizations determine the way projects are delivered and impact the responsibilities and influence of project managers. In this section, the way organizations influence the project management will be discussed.

Cultures and Styles

Organizations are made by arrangements of persons and departments working together in order to accomplish a common purpose. The culture and style an organization is adopting affects the way how it conducts projects. Specifically they could

be described as cultural norms which are developed over the time. Those norms include for instance the way a project is initiated or the people who have decision making authority. On the other side, cultural norms are not only imposed by the top management, they are rather shaped by the experiences of the entities of the organization. Given that each could be considered unique, each organization has developed a unique set of cultural norms differently affecting the way projects are delivered. Experiences could be related to:

- visions, mission, values and beliefs;
- regulations, policies, methods and procedures;
- motivation of the employees and reward system;
- risk tolerance;
- leadership, hierarchy and authority relationships;
- code of conduct, work ethic and work hours;
- operating environments.

One of the task of the project manager is to swiftly recognize and understand the cultural norms that could affect the project and act accordingly. To conclude, it is not rare for a project manager to be involved in an international project, especially considering the degree of globalization reached in the last decades. Within an international context is absolutely crucial to recognize the cultural norms not only of the organizations involved but also of the affected countries.

Structure of the Organization

The organizational structure affects the availability of resources and the way projects are conducted and delivered. According to the different types of structure, the influence and authority of project managers could be stronger or weaker.

Organization Structure / Project Characteristics	Functional	Matrix			Projectized
		Weak Matrix	Balanced Matrix	Strong Matrix	
Project Manager's Authority	Little or None	Low	Low to Moderate	Moderate to High	High to Almost Total
Resource Availability	Little or None	Low	Low to Moderate	Moderate to High	High to Almost Total
Who manages the project budget	Functional Manager	Functional Manager	Mixed	Project Manager	Project Manager
Project Manager's Role	Part-time	Part-time	Full-time	Full-time	Full-time
Project Management Administrative Staff	Part-time	Part-time	Part-time	Full-time	Full-time

Figure 1.1: Influence of Organizational Structures on Projects

Within a functional organizational structure, employees are grouped into specialized divisions (such as marketing, sales, engineering, research and development, etc.) and each function works independently.

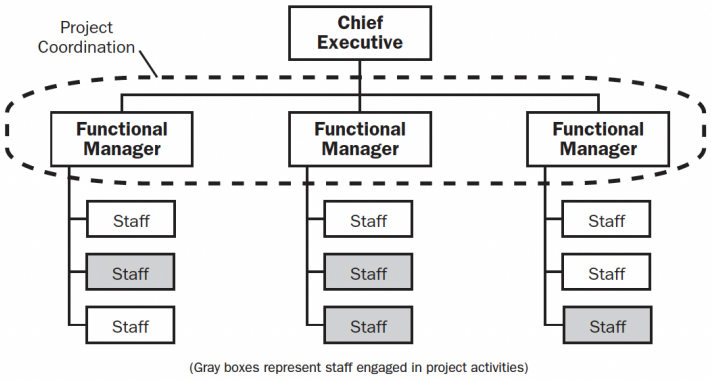


Figure 1.2: Functional Organization

When activities are coordinated according to two dimensions (functions and projects) the organization is adopting a matrix structure. Generally, each staff member has two managers , the functional one, who coordinates the activities within the function, and the project manager, who coordinates the activities related to a

specific project across several divisions. The authority of the project manager is correlated to the strength of the matrix.

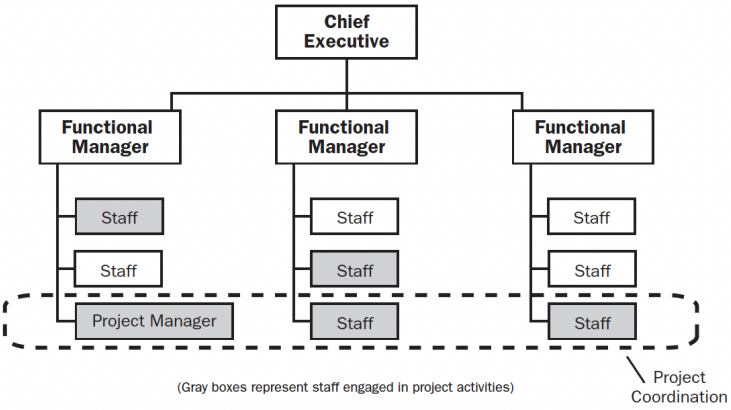


Figure 1.3: Matrix Organization

The authority of projects managers is strong if the entire organization is structured around individual projects. In a projectized organization, the project manager has complete authority and control over the project, including the ability to assign tasks and make decisions about the project's direction. The project manager is responsible for managing the budget, schedule, and quality, as well as for communicating with stakeholders and team members.

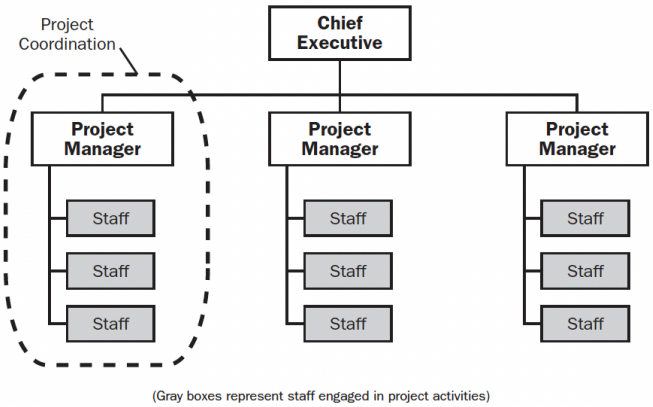


Figure 1.4: Projectized Organization

Process Assets

Organizational process assets are the collective body of knowledge, skills, experiences, and resources that an organization has developed and accumulated over time. These assets may include policies, procedures, templates, guidelines, historical data, and other documentation used to support the organization's processes and operations. Organizational process assets can be used to improve efficiency, consistency, and quality by providing a common foundation for decision-making and problem-solving. They can also be leveraged to develop new products, services, or processes, and to share knowledge and best practices within the organization. Organizational process assets are a key component of an organization's intellectual capital and are typically managed and maintained by the organization's process improvement or quality management department.

Environmental Factor

Within an organization there are factors influencing the management of a project that are not under direct control of the project team. There are several types of enterprise environmental factors, including:

- Geographical distribution of facilities and resource
- Industry and government standards
- Infrastructure
- Stakeholder risk tolerance
- Personnel administration
- Commercial database

1.1.2 Project Life Cycle

The project life cycle is the series of stages that a project goes through from its initiation to its closure. Phases are not monolithic blocks, in fact, within each of them multiple deliverables and objectives might exist. The project life cycle helps to provide a structured approach for project management and ensures that all necessary steps are taken to successfully deliver a project. At the beginning of this chapter, the concept of the diversity of each project has been introduced; however, it is possible to identify a generic structure that is independent from the size and complexity of the project, consisting of:

- starting the project,
- organizing and preparing the project work,
- carrying out the project work,
- closing the project.

Thanks to this framework, it is possible to highlight two characteristics that are generally common among projects:

- the economic cost and level of commitment is low at the beginning of a project and increases through the first three phases, reaching the maximum while carrying out the work. In the end , cost and commitment level decrease during the closing phase.
- The curves related to the cost of changes and risk follow a symmetrical path. At the beginning of a project the uncertainty is high and the cost of changes is low while at the end the opposite works. It implies that during the first stages it is more important to do the right thing, rather than doing the things right. On the other hand during the last phases doing the thing right is crucial.

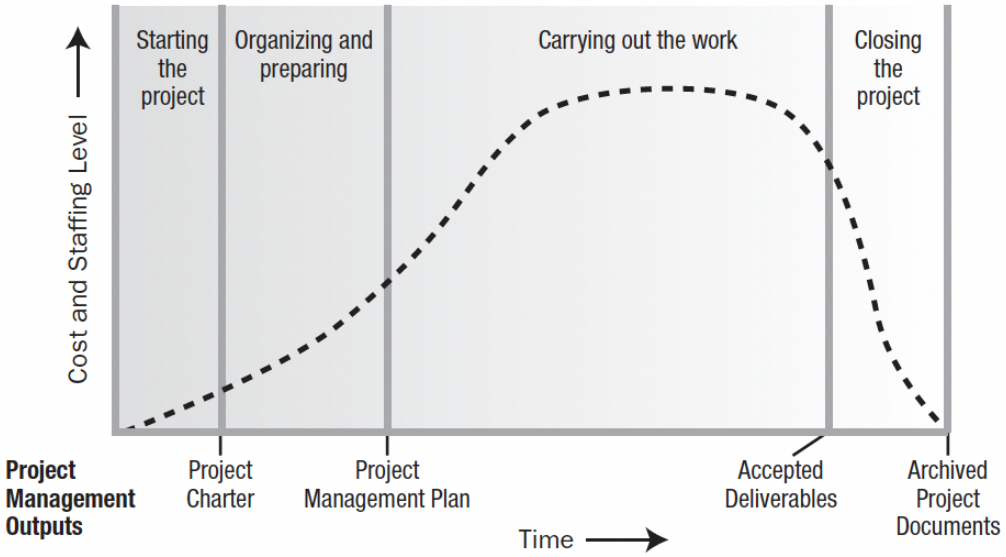


Figure 1.5: Cost and Staffing Levels Across a Generic Project Life Cycle Structure

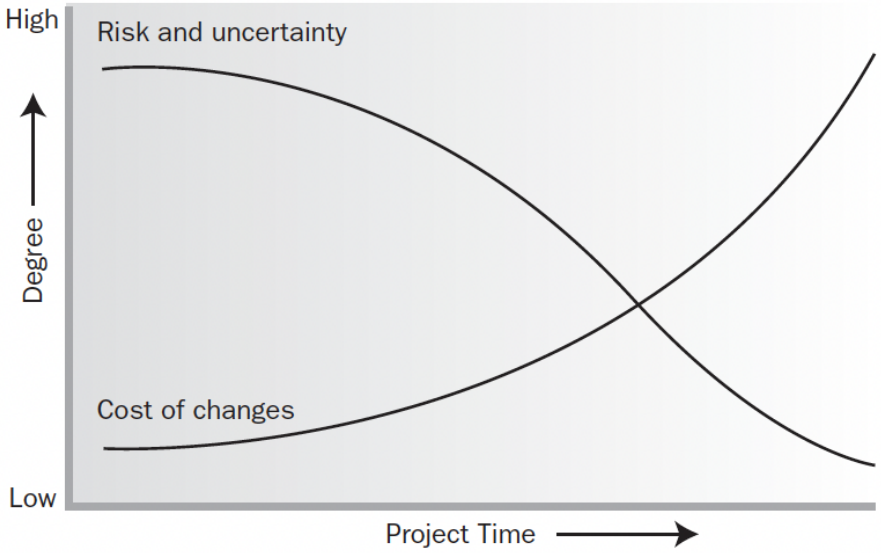


Figure 1.6: Impact of Variable Based on Project Time

The project life cycle framework is not unique, rather exists a spectrum, ranging from plan-driven to change-drive approaches. It is important to state that the perfect structure adaptable to each project does not exist; among the competencies of a project manager, the proper selection of the life cycle framework should be

one of them. An analysis of the most common project life cycles frameworks will be performed afterwards, however, it is crucial to understand the types of relationship existing between two phases. Basically, there are two types of phase-to-phase relationship:

- sequential - each phase starts only when the previous phase is completed;
- overlapping - a phase starts even if the previous one is not finished yet.

The project life cycle phases should not be confused with the Process Groups which consists of activities that have to be performed and could be repeated through different life cycle phases.

Predictive Life Cycle

The predictive life cycle approach (also known as fully plan-driven) involves planning and forecasting the course of a project before it begins. It is based on the idea that the more you can anticipate and prepare for potential challenges and setbacks, the higher are the chances to successfully deliver a project. In a predictive life cycle, the project team will spend significant time upfront gathering requirements, developing a detailed project plan, and identifying potential risks and mitigation strategies. Clear goals and milestones for measuring progress and success will be established. This approach is well-suited for projects with well-defined scope and requirements, and where the consequences of delays or changes are significant. It is often used in industries such as construction, manufacturing, and engineering, where the costs of mistakes or unexpected events can be high.

Iterative and Incremental Life Cycles

The iterative and incremental life cycle is a project management approach that involves repeated cycles through planning, implementation, and evaluation phases in order to deliver a complete project. This approach is characterized by the incremental delivery of functionality, with each iteration built upon the previous one. It is

designed to be flexible and adaptable, allowing the project team to respond to changing requirements and feedback from stakeholders. In an iterative and incremental life cycle, the project is divided into small, manageable chunks or "iterations," each of which delivers a working version of the final product. This approach allows for the early delivery of some value, as well as the opportunity for stakeholders to provide feedback and make changes along the way. It is well-suited for projects with complex or rapidly changing requirements, or where the requirements are not fully understood at the outset.

Adaptive Life Cycle

The adaptive life cycle is a project management approach that is similar to the iterative and incremental approach, but with an even stronger focus on flexibility and adaptability. Project team actively monitors and responds to changes in the environment, stakeholders, or project requirements as they arise. This approach is based on the idea that projects are inherently uncertain, and that the best way to deliver a successful project is to be constantly adapting and adjusting to new information and circumstances. In an adaptive life cycle, the project team begins by identifying the overall goals and objectives of the project, but leaves room for flexibility in terms of how those goals will be achieved. The project is divided into small, manageable chunks or "iterations" (usually with a duration ranging from 2 to 4 weeks) with each iteration delivering a working version of the final product. The team continually gathers feedback from stakeholders and adjusts the project plan as needed. This approach is well-suited for projects with high levels of uncertainty or complexity, or where the project team needs to be able to respond quickly to changing circumstances. It is often used in industries such as software development, research and development, and consulting.

1.1.3 Project Management Processes

The project management processes refers to the steps that are followed in order to successfully plan, execute, and deliver a project. They can be applied globally, no matter the industry the project refers to. However, even if they are referred as good practices, project managers should always consider whether a process is appropriate or not. Briefly, critical thinking should always be applied when considering the processes to be undertaken and the degree of rigor to be applied. The activity performed upfront consisting of the selection of the proper inputs and outputs of each process is known as tailoring. As mentioned before, Process Groups should not be confused with the life cycle phases. In fact, the Process Groups are normally repeated within the life cycle phases. For instance, when developing a new product the project goes through several phases, such as: concept development, feasibility study, prototyping, building and testing. A Process Group is not associated to one of these phases but it could be repeated in each of them.

An analysis of the five Process Groups will be presented hereafter.

Initiating Process Group

The Initiating Process Group consists of a series of activities performed in order to define a new project, or a new phase of a an existing project, aligning the stakeholders' expectations with the project's purpose. A project manager is assigned to the projects and the vision and boundaries are defined. Usually, in order to capture each discussed topic, a project chart is developed and shared with the relevant stakeholders. In the end, initial project requirements and service level agreements are discussed.

Planning Process Group

The Planning Process Group involves defining and documenting the actions necessary to achieve the project's objectives, including developing a comprehensive

project plan and identifying and securing the resources needed to complete the project. This process begins by refining the scope of the project and setting specific, measurable, achievable, relevant, and time-bound objectives. It also involves identifying any potential risks and developing strategies to mitigate them. Once the project plan has been developed, the next step is to identify and secure the necessary resources, including people, equipment, and materials. This may involve negotiating contracts with suppliers or contractors and obtaining any necessary approvals or permits. The Planning Process Group is an iterative process, meaning that it may involve revisiting and refining the plan as the project progresses and new information becomes available. Effective planning is essential to the success of a project, as it helps to ensure that the project stays on track and is completed within budget and on time.

Executing Process Group

Executing Process Group involves carrying out the work defined in the project plan to achieve the project's objectives. This includes coordinating the efforts of team members and stakeholders, as well as using the resources and tools identified in the planning process. During the execution of the project unforeseen events might happen; this may involve making changes to the project plan, such as adjusting the timeline or budget. The outputs of the Executing Process Group include deliverables, work performance data, and any necessary updates to the project plan.

Monitoring and Controlling Process Group

Monitoring and Controlling Process Group involves ongoing evaluation of the project's progress and performance to identify and address any deviations from the project plan. This includes monitoring the project's performance against the project baseline, as well as identifying and addressing any issues or risks that may impact the project's success. The Monitoring and Controlling Process Group also involves communicating with stakeholders to keep them informed of the project's progress and

to seek their input as needed. This may involve providing regular updates on the project's status, as well as seeking feedback and guidance from key stakeholders. The outputs of the Monitoring and Controlling Process Group include updates to the project plan, work performance data, and any necessary changes to the project's scope, schedule, budget, or quality objectives. Similarly to the Planning Process Group, the Monitoring and Controlling Process Group is an iterative process.

Closing Process Group

Closing Process Group follows the Monitoring and Controlling Process Group and involves completing all of the activities required to close the project, including finalizing all deliverables and completing any necessary documentation. It also involves reviewing the project to identify any lessons learned that can be applied to future projects, as well as obtaining final approval and acceptance from the relevant stakeholder. This may involve conducting a final review of the project to ensure that all objectives have been met, and obtaining sign-off from the customer or sponsor to confirm that they are satisfied with the results of the project. The Closing Process Group is important because it ensures that the project is properly completed and that all stakeholders are satisfied with the results. It also helps to ensure that any lesson learned from the project is captured and shared with the organization, so that future projects can benefit from the knowledge and experience gained during the project. The outputs of the Closing Process Group include the final project report and any necessary closure documentation.

1.1.4 Knowledge Areas

Previously, it has been mentioned that 47 project management processes have been identified. Out of the Process Groups, it is possible to group these processes into ten categories, known as Knowledge Areas, that represent different fields of specialization. They are:

- Project Integration Management - involves creating a plan for the entire project, including how all the different parts of the project will fit together.
- Project Scope Management - involves defining the boundaries of the project and what will be included, as well as creating a work breakdown structure to organize the work into smaller manageable chunks.
- Project Time Management - involves creating a schedule for the project and determining how long each task will take to complete.
- Project Cost Management - involves determining the budget for the project and monitoring expenses to ensure that the project stays within budget.
- Project Quality Management - involves establishing quality standards for the project and ensuring that all work meets these standards.
- Project Resource Management - involves identifying and acquiring the resources needed to complete the project, including personnel, materials, and equipment.
- Project Communication Management - involves creating a plan for communicating with stakeholders throughout the project, including team members, clients, and other interested parties.
- Project Risk Management - involves identifying and assessing potential risks to the project, and developing plans to mitigate or manage those risks.
- Project Procurement Management - involves acquiring goods or services from external suppliers for the project.
- Project Stakeholder Management - involves identifying and engaging with stakeholders, and managing their expectations and impact on the project.

As result of the categorization of the process activities into the ten Knowledge Areas, it is possible draw a matrix having the Knowledge Area on an axis and the Process Group on the other one. This matrix, known as Project Management

Process Group and Knowledge Area Mapping, allows project managers to better understand the activities and responsibilities involved 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 1.7: Project Management Process Group and Knowledge Area Mapping

1.1.5 Agile Project Management

Agile Project Management consists of a series of value driven methodologies based on the adaptive process, mainly applied for IT projects. The word Agility recalls the sense of ownership, authority and adaptability a project manager must have and the ability to quickly move and change the direction of a project. The concept of the Agile Project Management has been developed in 2001, when the Agile Manifesto, a document built on 12 principles and 4 values for agile software development, was published. The 4 agile values were written as opposed to the principles ruling the traditional software development:

- individuals and interactions over processes and tools;
- working software over comprehensive documentation;
- customer collaboration over contract negotiation;
- responding to change over following a plan.

The 12 principles represent the guidelines for the agile methodologies. They picture a culture where the change is welcome, the customer is the main focus of the work and the alignment between technical and business needs is crucial. The 12 principles:

1. Our highest priority is to satisfy the customer through early and continuous delivery of valuable software.
2. Welcome changing requirements, even late in development. Agile processes harness change for the customer's competitive advantage.
3. Deliver working software frequently, from a couple of weeks to a couple of months, with a preference to the shorter timescale.
4. Business people and developers must work together daily throughout the project.

5. Build projects around motivated individuals. Give them the environment and support they need, and trust them to get the job done.

6. The most efficient and effective method of conveying information to and within a development team is face-to-face conversation.

7. Working software is the primary measure of progress.

8. Agile processes promote sustainable development. The sponsors, developers, and users should be able to maintain a constant pace indefinitely.

9. Continuous attention to technical excellence and good design enhances agility.

10. Simplicity–the art of maximizing the amount of work not done–is essential.

11. The best architectures, requirements, and designs emerge from self-organizing teams.

12. At regular intervals, the team reflects on how to become more effective, then tunes and adjusts its behavior accordingly.

Inspired by the Agile Manifesto, more than 50 agile methodologies have been developed during the last two decades. Among them, one of the most popular is Scrum.

1.1.6 Scrum Methodology

Scrum is an agile framework based on iterative and incremental product delivery, frequent feedback and collaborative decision making. It uses Sprints, which are fixed-length iterations. Ideally, the duration of each sprint ranges from 2 to 3 weeks; however, they could last up to 30 days. Within a sprint, the Scrum team has the objective to develop a potentially releasable product increment. Scrum provides a structure of roles, meetings, rules, and artifacts. Teams are responsible for creating and adapting their processes within this framework.

Scrum Roles

Within the Scrum framework 3 key roles exist.

- Scrum Development Team - cross-functional group of individuals working together to deliver a product using the Scrum framework. The team is self-organizing, meaning that the team members have the autonomy to make decisions about how best to complete their work. The team is also cross-functional, meaning that it has all the skills necessary to complete the work without relying on outside resources. It is typically small, with around 5-9 members, and the success rate is higher when the team is physically located in one room, especially for the first sprints. The team is guided by a Scrum Master, who facilitate the process and remove any obstacles that may block the team's progresses.

- Scrum Master - leads the Scrum development team and work with the organization to make the Scrum possible. The role of the Scrum master is to make sure that the framework is understood and enacted, creating an environment where the team's self-organization is promoted. He/She protects the team from external interference and distractions and provides help resolving potential obstacles. He/She does not have management authority over the team.

- Product Owner - plays a key role ensuring that the team is working on the right things and delivering value to the stakeholders. The product owner is responsible for representing the interests of the stakeholders and defining the features and requirements of the product. The product owner is responsible for creating the product vision and ensuring that the development team is working on the most valuable features. They are also responsible for maintaining the product backlog, which is a prioritized list of work that needs to be completed in order to deliver the desired product.

Scrum Meetings

The crucial steps of the Scrum framework consist of the series of meeting that are repeated during each sprint.

- Sprint Planning Meeting - takes place at the beginning of each sprint. The product owner and team negotiate which product backlog Items will attempt to convert into releasable product increment. The Product Owner decides which are the most important Items to be developed, while the development team selects the amount of work they feel they can develop within the sprint period. The work is pulled from the product backlog, which is the list of all the small activities that have to be performed in order to deliver the whole project, to the sprint backlog, the items that the development team attempts to implement within a sprint.

- Daily Scrum and Sprint Execution - takes place at the beginning of each day and lasts 10 to 15 minutes. Each member of the development team shares the progress made towards the sprint goal and creates a plan for the day. If any occurred, impediments are shared with the other components of the team in order to resolve the blocking points. Impediments caused by issues beyond the team's control are considered organizational impediments and should be addressed by the product owner. Daily scrum is performed in order to disrupt old habits of working individually and is meant to enhance the self-organization of the scrum development team.

- Sprint Review Meeting - takes place at the end of each sprint in order to inspect and adapt the product as it emerges. The increments to the product are shown to everyone who is interested, such as customers, end users and stakeholders. Their participation is crucial, since IT products could be extremely difficult to visualize, while interaction with the product could be a useful source of insights for the team. The items selected during the sprint planning are reviewed by the team and, if accomplished, marked as done. If an item is not completed

it is taken back to the product backlog and the product owner assigns to it a priority level in order to properly evaluate it as candidate for the next sprint backlog. During the sprint review meeting a change in the scope of the project might arise from the feedback collected by the stakeholders; in this case the scrum master and the product owner adjust the product backlog and the items prioritization.

- Sprint Retrospective Meeting - allows the team to reflect on their work and identify areas for improvement. It is held at the end of a sprint, and all team members, including the scrum Master and product owner, should be invited to participate. During the meeting, the team should discuss the following: what went well during the sprint, what could be improved, any challenges or roadblocks encountered and any ideas for improving the process in the future. The goal of the meeting is not to assign blame or point fingers, but rather to identify actionable items that the team can take to improve. This could include things like adjusting the team's workflow, identifying and addressing bottlenecks, or implementing new tools or technologies. It is important for the team to approach the retrospective with an open and collaborative mindset, and to encourage all team members to participate in the discussion. The scrum master should facilitate the meeting, but it is important for everyone to have a chance to share their thoughts and ideas. At the end of the meeting, the team should come up with a list of action items to address any issues that were identified. These action items should be tracked and followed up on in future sprints to ensure that the team is continuously improving. Overall, the sprint retrospective meeting is an essential part of the Scrum process, and it helps the team identify and address any challenges they faced during the sprint, ultimately improving their productivity and effectiveness.

Scrum Artifacts

Three artifacts are defined in the Scrum framework: product backlog, sprint backlog and increment. Even though they have been introduced and briefly described above, a specific section would make the comprehension easier.

- Product Backlog - consists of a prioritized list of desired functionalities the final product should have. It is a living document that is owned and maintained by the product owner, and it is used to track and prioritize the work that needs to be done. The product backlog is a key component of the Scrum process, as it allows the team to understand the overall direction of the product and the priorities of the business. It contains a list of items, known as backlog items, that can include user stories, defects, technical tasks, and any other work that needs to be done. The product backlog is organized in order of priority, with the most important items at the top. The product owner is responsible for prioritizing the items on the backlog, and they work with the development team to ensure that the highest value items are tackled first. Even if the backlog is run by the product owner, any stakeholder (including the team) is allowed to add items. During the sprint planning meeting, the team selects items from the top of the product backlog to work on in the current sprint. The team then uses the product backlog to track the progresses of the work and to identify any changes that need to be made. Overall, the product backlog is a critical tool for the Scrum team, as it helps them understanding the business goals and priorities, and it guides their work throughout the development process.

- Sprint Backlog - is the subset of the product backlog which includes the list of tasks that a team plans to complete during a sprint. During the sprint planning meeting, the team selects items from the product backlog and adds them to the sprint backlog, with the goal of completing all of the tasks on the list by the end of the sprint. The sprint backlog is updated and refined throughout the sprint as the team works through the tasks and new information becomes

available. It is an important tool for tracking progresses and ensuring that the team stays focused on the most important tasks.

- Increment - is a completed portion of work that is added to the final product at the end of each sprint. The increment is an artifact of the Scrum framework because it represents the tangible result of the team's efforts during the sprint. It is a tangible representation of the progress that the team has made towards completing the project. The increment is built upon the previous increments, and each new increment should add value to the product. The goal of the Scrum framework is to deliver increments of working software frequently, with the ultimate goal of creating a complete, usable product that meets the needs of the customer. The increment is an important aspect of the Scrum framework because it helps to ensure that the product is being developed in a sustainable and predictable manner.

1.2 Project Management Office

The great majority of companies deal with more than one project at the same time, creating the needs to coordinate and allocate resources and standardize the management practices. The answer to this needs is represented by the project management office (PMO), a management structure that standardizes the project-related governance processes and facilitates the sharing of resources, methodologies, tools, and techniques (Project Management Institute, 2013, p.10).

1.2.1 PMO Functions

The influence of the PMO over the projects depends on the management's choice. There are three main functions with an increasing level of influence, the PMO could play:

- Supportive – support is provided by supplying standardized documents and

training to project managers. Moreover, it works as project repository and provides analysis over past projects in order to get best practices out of lessons learned.

- Controlling – the compliance to standardized project management framework, the templates and tools provided is monitored and, in some cases, enforced.

- Directive – the PMO directly controls and manage the organizations projects.

The functions seen above are related only to the top-down perspective associated to the PMO; from the company's strategy they provide a way to standardize the management of the projects in compliance with the management's choices. However, the PMO plays a role also when we consider the bottom-up perspective. In fact, two main functions could be highlighted:

- Reporting – especially in project-based organization the number of projects could be very high creating the risk the management is not able to keep track of the progress made in each of them. The PMO should be able to collect, analyse, and provide in an accessible way key performance indicators, in order to provide a synthetic but exhaustive overview of the projects ongoing.

- Escalating – risks and unforeseen events are a certainty when managing a project. It could happen that project managers does not have the competencies or authority to solve blocking points. In order to optimize time and resources the PMO enhances the communication between in organizations, escalating issues to top management and providing solutions to project managers.

1.2.2 Portfolio and Program Management

When the complexity and number of ongoing projects within an organization is increasing, they could be grouped in programs. A program is a collection of projects that share the same strategic goals or have one or more characteristics in common.

Program managers lead the program prioritizing and budgeting the strategic initiatives. Moreover they manage the interdependencies among the projects of the program and ensure the availability and capacity of resources. When multiple programs are managed and coordinated at the same time, organization's top management have an overview over the portfolio of ongoing projects. Portfolio management has the objective to align programs and projects to the strategic goal of the organization. The portfolio manager, responsible for the portfolio optimization and alignment with the business goal and business value, is typically a top manager. The role and functions described above are supported or associated to the project management office (PMO) of the organization.

1.2.3 Best Practices for PMO Implementation

The implementation of the PMO from scratch is not a trivial task. To this end, several methodologies have been developed during the last two decades. The best practices are summarised below:

- Define the objectives of the PMO – given the wide variety of functions a PMO could perform it is important to clearly define the scope and objectives of the PMO. In this way it is possible to reduce unnecessary activities and avoid misunderstandings with the stakeholders involved.

- Sponsorship is crucial – if none from the top management is actively and directly supporting the implementation of the PMO it is extremely difficult to gain the trust of other project managers, especially when they have to share bad news about their projects.

- Define PMO tools and processes – based on the objectives, it is useful to list the functions the PMO has to perform and properly select the tools that will provide support the activities.

- Define the PMO organization – it involves the definition of how many people

and which skills are needed to properly run the PMO. The choice depends on the number and type projects the company is running and on the influence the PMO is meant to have.

- Communication is essential – it is the first weapon available in order to convince the key stakeholders the PMO could improve company's performance and ease the work of projects managers.

- Run PMO routines – PMO is expected to provide an overview of the projects status. Therefore, it is important to set up routines in order to quickly get the information top management is demanding.

- Develop a PMO charter – since the implementation and management of PMO could be complex and could involve several amount of information, a document which captures the key points would be useful.

1.3 Introduction to Change Management

Modern organisations constantly face the necessity to adapt themselves in order to respond to changes happening in the external world and within the borders of the company. At the end of the 1980s the frequency of these changes pushed academics to study how humans and human systems experience change. During 1990, the results of researches started to spread out in the business world while several books, where the management of changes was addressed in a more formalized way, were published. Numerous approaches to effective implementation of changes in organizations have been developed so far; however, it is possible to provide a common definition of change management as the process of continually renewing an organization's direction, structure, and capabilities to serve the ever-changing needs of external and internal customers (Moran & Brightman, 2000). This definition could be misleading, as apparently depicts change management as a reactive discipline that companies use only when customers needs change. It is not like that; as a

matter of fact companies, or at least some of them, have the ability to shape the customers needs using change management in a proactive way. They don't change in order to follow their clients but to give a new direction to the whole market.

1.3.1 Types of change

The study of the management of the change necessarily involves the study of the change itself. First of all, it is legitimate to ask what can be defined as an organizational change. To provide a general definition: it consists of actions in which a company or business alters a major component of its organization, such as its culture, the underlying technologies or the infrastructure it uses to operate, or its internal processes (Stobierski). Academic studies and business experiences has led to a greater level of details and understanding of the different types of changes an organization could face during its lifetime. There is not a unique categorization of all types of changes since several studies came up with different classifications. In the next paragraph the focus will be on the ones that are more relevant to the analysis that will be carried out in the next chapters.

The Spectrum of Changes

Looking at the changes classification problem from an high level perspectives it is possible to identify a spectrum within which changes can be allocated. On the one end of the spectrum there are the adaptive changes while transformational changes are on the other side. In between, all the different magnitudes of changes are allocated.
Adaptive changes doesn't involve radical transformation in the organization; they are rather small, incremental, evolutionary and usually associated to improvement of existing products and processes. Examples of adaptive changes are represented by:

- adding a new feature to an existing mobile application;

- hiring a new employee to fulfill a vacancy;
- changing provider of office supplies;
- modifying a peripheral part of the architecture of a product.

On the other hand, transformational changes are radical and aim to modify one or more fundamental parts of an organization. They are revolutionary and greater in scope with respect to the adaptive ones. Examples of transformational changes are:

- changing the organization of the company from a functional to a divisional structure;
- creating a new department;
- redesign from scratch the architecture of an existing product;
- migrate all the data of the company from one provider to another.

Looking at the two tails of the spectrum it is possible to highlight some differences in the way managers deal with those kind of changes. Adaptive ones require a bottom-up analysis; from an analytical analysis managers have to figure out how the whole company would benefit from a small change and convince employees and relevant stakeholders of their effectiveness. The change process should methodically follow planning, implementation and review phases, while analysis on sustainability and value should be carried out.

Transformational changes go in the opposite direction following a top-down approach: managers are required to have a vision and to guide employees through the process. Make them believe in the change is a key factor for the success of this type of transformation.

Despite a large amount of change could be classified as adaptive or transformational, the greatest majority of them falls within the spectrum, not at the ends. Dealing with these cases managers must be able to find the correct balance between being methodical and visionary.

The 5 Types of Organizational Change

Among the possible classification of change, one which is widely accepted counts 5 types of organizational changes:

- Organization Wide Change
- Transformational Change
- Personnel Change
- Unplanned Change
- Remedial Change

Organization Wide Change An organization wide change involves the overall structure of the company operating at a large scale. Among all the kind of changes they are the most strategic-oriented. Given the complexity of the change it is necessary to accurately plan them, otherwise the effect on the business could be disruptive. Examples of this kind of change are:

- shift from functional to matrix business structure;
- shift from a reactive entrepreneurial organization to a more stable corporate development one;
- downsizing of a company;

Transformational Change They are focused on changing the way daily business is run. Changes in the organizational strategy are included in this category. Transformational changes differs form the organizational wide ones since they are focused on a specific business area.

Examples are represented by:

- adoption of a new software in a business unit;
- change a process within the finance department;

- provide to every member of a department the same smartphone to improve communication;

Personnel Change Personnel changes happen whenever a change occur in the personnel of the organization. They involve new hires, promotions, demotions and layoffs. They are the easiest to understand, however the should be handled carefully as they can highly impact the morale of the team both in a positive and negative way.

Unplanned Change Reactive-oriented unplanned changes take place whenever an unforeseen event happen. An organization should be aware that it cannot foresee every possible event, so it should be ready to implement an unplanned change if necessary. The most glaring example is represent by the adoption of work from home policies as response to the spread of the COVID 19 virus.

Remedial Change The necessity of remedial changes arise when an organization has to address a problem or deficiency. They could be seen as a corrective actions to improve company's performance. They are usually supported by upper management having the information to see where the issues lie. Examples are represented by:

- improving the safety of IT system after a cyber attack;
- changing a machinery after the detection of an elevate rate defective items;
- adopting an air-sanitation system in the office after air quality measurements;

1.3.2 Challenges in Change Management

As already mentioned, implementing a change is not easy, as many heterogeneous challenges can arise from different perspectives (psychological, operational, economical, etc.). The most influential author dealing with the discipline of change management, John P. Kotter published in 1996 his most famous book "Leading Change". Kotter analyzed the challenges that an organization typically face and found that 8 mistakes are commonly made.

Allowing Too Much Complacency

Organizations where the level of complacency is high usually fail when a change has to take place since the initiators of the change do not manage to establish and communicate a sufficient level of urgency within the organization.
Promoters of the change are used to allow a high level of complacency when:

- they underestimate how difficult is to drive people out of their comfort zone;
- they do not recognize how their own actions can reinforce the status quo;
- they lack of patience;
- they are scared of the possible reaction of people when trying to reduce complacency (people could become defensive with negative effect on morale and short-term performance);
- they confuse urgency with anxiety creating even more resistance to change.

On the other side, when complacency is too low the behaviours of the employees could drive to results that are similar to the ones seen above. For instance, low standards, lack of visible crisis and poor feedback from external constituencies could be symptoms of a culture where is fine working side to side with problems, rather than make an extra effort to solve them. In other words, they lack of the sense of urgency necessary to overcome current issues embracing the change that someone else is trying to enforce.

Failing to Create a Sufficiently Powerful Guiding Coalition

Major changes require the support of the head of the organization. In addition, successful transformation involves the creation of a large team guiding the process. The larger the coalition, the larger the probability of success are. On top of this, the effectiveness of the team depends upon the formal titles, information, expertise, relationship, reputation and, of course, leadership. Individuals alone, no matter

the level of all the characteristics mentioned above, rarely manage successfully the implementation of a change. Weak committees could achieve short-term successes but sooner or later, countervailing forces undermine the initiatives.

Underestimating the Power of Vision

A strong vision is necessary to direct, align and inspire the actions that will drive the change. With no vision a transformation could be reduced to a mere to do list, which will result confusing, incompatible and incoherent with respect to the final goal. A vision would align people making them going in the same direction. Moreover, it represents an extremely useful guide to decision making avoiding long, time-consuming debates within the organization. A successful vision should be described in 5 minutes or less, avoiding excessive use of technical language in order to reach out the greatest number of people possible. The more the people would understand and embrace the vision, the highest the success probability are.

Undercommunicating the Vision by a Factor of 10 (or 100 or Even 1000)

Willingness of employees making short-term sacrifices for the sake of the change is not granted and unhappiness with respect to the status quo does not represent a sufficient condition for the implementation of a change. Instead, they would be committed to a change if convinced that potential benefit are attractive and the transformation is really possible. A credible communication is crucial to capture employees' hearts and mind. It is possible to identify three patterns of ineffective communication:

- a team design a good transformation vision but fails in the communication phase by holding only a few meetings or using only a small fraction of the intracompany communication tools.
- There is a big communication effort by the heads of the organization but most of the middle managers remain silent; there is no continuity between the words

of the heads and the ones of the managers.

- Like the previous case, there is a big communication effort; however, some highly visible individuals (managers, heads, etc.) still behave in ways opposite to the vision, generating cynicism among the employees towards the intent of the organization.

To sum up, communication is built upon both words and deeds. Usually the latter is the most effective form and incoherence with verbal communication would have negative effect on the outcome of the transformation, dramatically increasing the probability of failure.

Permitting Obstacles to Block the New Vision

One of the main reason why transformations fail is the presence of obstacles on the employees path. People feels disempowered by them, especially if they are not swiftly addressed by managers or change promoters, no matter the quality of the vision and the intentions.

Failing to Create Short-Term Wins

Extensive transformations take time, especially when they are complex (e.g business transformation or strategic changes). Without any kind of celebration during the transformation process the risk of employees giving up or joining the resistance is very high. People needs evidence that within six to eighteen months the journey is producing expected results. It is known that, when the effort takes long time, level of attention and urgency typically drops down after a while. Short-term goals help keeping the pressure at a sufficient level. An important distinction should be made between creating short-term wins and hoping for short-term wins. The former is active while the latter is passive. It is clear that managers should be proactive, setting the right conditions to achieve short-term wins, rather than passively expecting improvements during the journey to get to the vision.

Declaring Victory Too Soon

The temptation to declare victory when the first improvements pop up increases with the length of the transformation. Deep changes within an organization could take up to 10 years and if they stop before their actual end the whole work done at that point would be lost. The causes of this kind of mistakes are several; to condense, the energy and enthusiasm of the change initiators is very high at the beginning of the project, while the resistors are always looking for opportunities the cease the process. When the energy of the change enablers begin to lack the resistors could easily stall or block the change process. Moreover, once that process is said to be over, it is very difficult to change the inertia of the employees again; the result, after 2 or 3 years is the cancellation of all the effects of the transformation.

Neglecting to Anchor Changes Firmly in the Corporate Culture

A change is successful when, for an organization, it becomes "the way we do things around here". In other words, when the scope of the transformation is embodied in the culture of the company and in the minds of the employees. If this result is not achieved, no matter the absence of the other mistakes, the change would be reversible and the positive effects would be subject to degradation as soon as the pressures associated with a change effort are removed. To avoid this mistake managers have to keep in mind two factors:

- the importance to show people how specific behaviours and attitudes have helped to improve performance. To associate positive performance of the organization to the actions enhanced by the change process leaves no room for employees to make inaccurate links.

- The process could not be immediate but it will take time. Even though it is already been said, enough time should be taken into account to ensure that next generation of managers personify themselves in the new approach. To this end, promotion criteria should be reshaped in order to put at the top of

the organization people who really believes in the new way to do things. In addition, there could be resistors always ready to undermine the change, even if the process is at the last stage.

1.3.3 From The Forces That Drive the Change to the Concept of Change in Modern Organizations

So far, we have seen all the incidents that can happen during the transformation journey and it may appear impossible to achieve the final goal without incurring in one of the mistakes seen above. However, from a macroscopic point of view, today's companies are deeply different from companies of past decades; it means that, no matter the difficulties and the obstacles on the road, organizations will evolve or fail eventually. During the 80s and the 90s Kotter studied the major forces that drive changes. Even if some assumptions have changed during the years, most of the insights Kotter provided could be considered still valid. The ones that are not valid anymore, will be just introduced in the analysis that follows, even if they are extremely interesting from an historical point of view. The studies of Kotter about the forces driving changes could be synthesised in the following diagram, where each box is connected to the one below thanks to a cause-effect relationship. The diagram clearly shows how from great economic and social changes organisations modified themselves and the way they approached a transformation. To ease the analysis, the diagram is divided in 4 layers where the top corresponds to the first layer and the bottom to the last on.

The First Layer

Looking the first layer it is possible to observe 4 major forces:

- Technological Change - technology has always been one of the main driver of changes both within society and organizations. In particular, during the last decades technology improvements have led to a dramatic increase in the

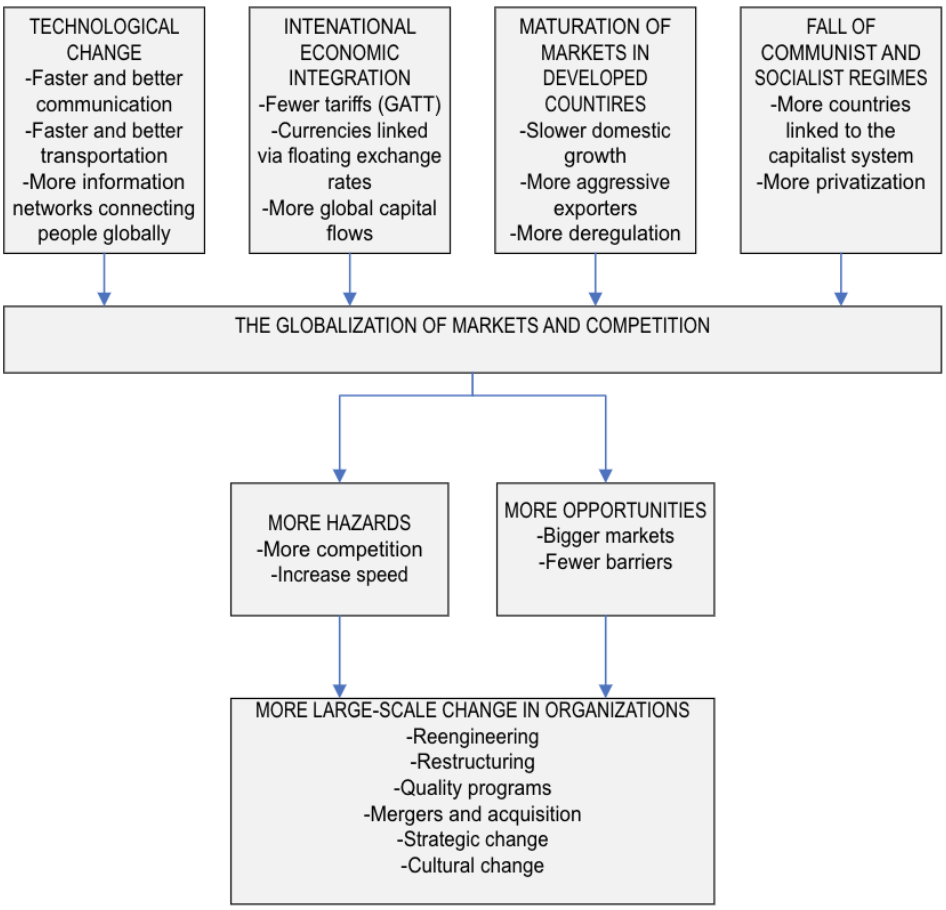


Figure 1.8: Economic and Social Forces Driving the Need for Major Change in Organizations

velocity and quality both in communication and transportation. Technological revolutions have substantially overcome the barriers separating people coming from different part of a region, a nation, a continent or the World. As a consequence, a very wide network of information has been developed. The most tangible example of technological change in this direction is represented by the diffusion of the Internet.

- International Economic Integration - wuring the last decades the majority of the developed countries signed a large number of deals with the aim to ease the trades within a designated area. European Union is the most glaring example,

an area where capital and goods can be traded without custom costs and tariffs. The lowering of the tariffs is not something impacting only the EU area, indeed it is a global tendency which began with the GATT (General Agreement on Tariffs and Trade) signed in Geneva in the 1947 by 23 nations, including United States and China. Economic integration worldwide is also facilitated by floating exchange rate between different currencies.

- Maturation of Markets in Developed Countries - within developed countries such as Italy, France or United States the GDP is growing at a lower rate with respect to the emerging ones. However the growth and the market itself is quite stable for this kind of countries, leaving room to the governments for deregulation, as the market is able to sustain itself without a strict supervision. In addition, when a market is mature players not only look within the borders of the country but they try to become aggressive exporters. A consideration has to be made about this point: even if it is still valid, it is necessary to integrate it, stating that emerging economies as well are aggressive exports especially considering the manufacturing industry, given the lower cost of the labour.

- Fall of Communist and Socialist Regimes - despite the historical interest this element will not be object of further analysis.

Before moving on to the second layer a consideration has to be made: looking at the diagram proposed by Kotter the elements of this layer may seem to be independent with each others. This is not correct, in fact the three blocks analysed are tightly interconnected. An increase in the displacement of people and goods made the existence of trade agreements between countries a necessity while more aggressive exporters acted and are acting as enablers for the creation and enlargement of infrastructure allowing better and faster communication and transportation.

The Second Layer

The second layer sums up the effects produced by the previous one. As mentioned before, the reduction of barriers in terms of communication and transportation has widened the range of action for organizations. They started looking beyond their nation both for selling their products or services and for recruiting labour force, building production plant and opening new offices. Globalization of the market has generated a lot of benefit for many organizations, such as the possibility to lower the production costs and to develop cross-border cooperation. However, a bigger market also means a greater number of competitors and fierce competition. As a response, governments could pursue protectionist policies with the intent to protect the domestic economies.

The Third Layer

Globalization of the markets and competition are the cause of two macro-effect:

- More Hazards - harsh competition at a global level and the increased speed of communication and transportation has made the life of an organization harder. To survive in the global market, a firm is called to take riskier decision with respect to a pre-globalization firm. Moreover, organizations decision time has shortened since many competitors around the world are already developing new ideas, new product and processes.

- More Opportunities - if firms are called to make quicker and more extreme decisions, on the other side the global market offers more opportunities. Incumbents could adopt a niche approach working in a specialized way or exploit economies of scale at a greater level. New entrants could easily join many market given the lower entry barriers.

The Fourth Layer

For the sake of the analysis that will be carried out, the fourth and last layer is one of major interest. If the market offers more opportunities and firms are called to adopt a riskier approach organizations need to change themselves (or part of the themselves) quickly. As the rate and scale of changes increases firms need a systemic way to manage transformation. This is why, as the world started to be globalized, change management skills began to be a must have in most of the globalized firms.

1.3.4 Change Management Models

Even though change management is quite a new discipline, numerous approaches to manage changes have been developed in the last decades. The high frequency modern organizations have to deal with transformation created the necessity to have models and standards to rely constantly upon. The most diffused approaches to manage a transformation are discussed in this section.

Kotter's Model

Kotter's studies could be summarised by his model on how organizations should deal with change. Kotter developed an eight stages model, where each step of the process is linked to one of the eight mistakes seen above. The eight steps are:

- Establishing a Sense of Urgency
- Creating the Guiding Coalition
- Developing a Vision and Strategy
- Communicating the Change Vision
- Empowering Broad-Based Action
- Generating Short-Term Wins

- Consolidating Gains and Producing More Change
- Anchoring New Approaches in the Culture

Kotter affirms that a successful transformation goes through all the eight steps following the sequence shown above. Each step plays a crucial role when a transformation has to be implemented; skipping or neglecting them, would make the process go ahead without a solid base and steps back will be necessary.

Lewin's Model

Lewin developed a very essential model based on 3 main stages:

- Unfreezing - using a metaphor, before you can cook a frozen meal, you have to defrost it. The first step to implement a change should be the unfreezing of the existing scenario. The practical meaning of this word is to create awareness among employees of the status quo and of the necessity for a change. During the unfreezing the communication plays a crucial role preparing the people to take the first steps towards the new direction. Through an effective communication, employees can be informed about the imminent change and of the benefits deriving from it.
- Changing - once people are properly informed and prepared they can begin to move. During this phase the change is implemented and the organization moves from the "as is" situation to the "to be" scenario. In order to point out the essence of this step, it is also referred as "transitioning" or "moving". It is probably the most difficult phase for employees as it is associated to uncertainty and fear due to the fact that people begin to learn new processes, ways of thinking, behaviours and tools. Especially during the first period it could be extremely hard for a person to change a well established routine; this is why also during this step communication plays an important role reminding the benefits arising once the transformation is fully completed.

- Refreezing - the last step of the model aims to reinforce, stabilize and solidify the results obtained during the changing. According to Lewin, refreezing is important to ensure that people do not revert back their old ways of thinking or doing prior to the implementation of the transformation. To guarantee the change is not lost it needs to be cemented into the organization's culture. Lewin suggests to create rewards and acknowledgment to reinforce the new state as it is believed that positively reinforced behaviours will likely be repeated. Nowadays there is a discussion about the usefulness of this step: someone thinks that the refreezing step is outdated due to the high rate of changes modern business has to face. In other words, there is no point refreezing a situation that will be soon unfrozen. On the other side, without this step there is the risk that no change will be effectively implemented as people tend to fall back the their previous behaviours.

The model is not as detailed as the previous one, but still contains which is probably the essence of the change management. In order to successfully lead a transformation the resistance of the people has to be beaten, then the change could happen. In the end, it is fundamental to solidify the new scenario to avoid the fallout in the previous situation.

ADKAR Model and Prosci Methodology

ADKAR Model is the focal point of Prosci Methodology, a systematic and holistic approach to change management. Moreover, it also aims at building internal organizational capabilities in order to deal swiftly with the ever increasing number of transformation. It is based on five pillars:

- we change for a reason;
- organizational change requires individual change;
- organizational outcomes are the collective result of individual change;

- change management is an enabling framework for managing the people side of change;
- we apply change management to realize the benefits and desired outcomes of change.

The methodology acts at two different levels; for personal change is based on ADKAR, while organizational change is realized following the Three Phase Model, based on the following steps:

- Prepare Approach
- Manage Change
- Sustain Outcomes

The Three Phase Model is evidently inspired by the Lewin's Model and for this reason the following analysis will be focused on the ADKAR Model, which represents the essence of this innovative methodology helping organization dealing with the people side of change through a 5-step framework. As already emphasized by the pillars, organizational change only happens at an individual level. In other words, changing an organization is about changing the individuals' behaviour within the organization. ADKAR is an acronym where each letter corresponds to one of the building blocks that people must go through in order to achieve successful change:

- Awareness - leading people to see the need for change. During the first step the change enabler has to explain what are the changes about and why they are necessary. People should be aware of what is going on and why. Without the understanding of the big "why", people cannot desire the change.
- Desire - establishing the desire for change. This block is particularly tricky since it is extremely hard to control and influence how people feel. However, it is proven that employees respond positively to change when they feel listened and well-treated during the whole process.

- Knowledge - providing employees with the information or skills they need to achieve change.
- Ability - applying knowledge and skills to bring about change. If knowledge can be seen as the block dealing with theory and understanding, this step is all about practice. Once employees have acquired the knowledge those competences have to be applied during the daily routine. The job of the change manager is to assure that this mechanism works swiftly.
- Reinforcement - Making sure that people continue to use the new methods, preventing them from going back to old ways.

Each building block should be followed in the correct order, however it could be difficult to identify each milestones. For this reason the very first step is to rate each element on a 1-5 scale in order to understand whether people are ready to go to the next steps. In particular a stage score equal of below to 3 means that the block is considered as a barrier and employees are not ready to move forward. Rating the building blocks is not a one off activity but it has to be repeated regularly to monitor the process and understand whether or not is possible to move on to the next stage. The greatest difficulty associated with this activity is to assign correct rating to each building block. As a matter of fact, the score is qualitative and one of the ability of the change manager is to understand where is necessary to take action and where the current situation is sufficient to guarantee a smooth transformation. Besides the building blocks ADKAR methodology offers a set of tactics to overcome each step. To raise awareness it is suggested to:

- communicate effectively;
- make business information accessible;
- coaching by manager/supervisor.

To create desire in people, most effective tactics are:

- engage employees in the change process;
- equip managers to be effective change leaders;
- anticipate resistance.

To make people acquire new knowledge and skills is suggested to:

- make user groups and forums;
- make effective training and education programs in-house;
- have 1:1 coaching session.

Tactics available to apply the knowledge previously acquired are:

- ensure day-to-day involvement of supervisors;
- make hand-on exercises;
- provide access to subject matter experts.

To reinforce the results achieved best tactics are:

- celebrate and recognize successes;
- collect feedback from employees;
- offer rewards.

To conclude ADKAR model can be used as a tool for troubleshooting dysfunctional change processes as well.

McKinsey 7-S Model

7-S Model was developed during the 70s by two former McKinsey consultants: Thomas J. Peters and Robert H. Waterman. The framework consists of a maps of correlated factors that influence the ability of an organization to achieve successfully a change. With respect to the models seen so far this one presents no hierarchy

among the elements of the framework, suggesting that progress in one part of the organization will be difficultly achievable if, at the same time there is no effort on the others. In other words, improvements or transformations are achieved successfully only if seven different elements (strategy, structure, system, staff, style, skills and shared values) are working harmonically and consistently. McKinsey Model is not only a way to lead transformation but also a fundamental tool useful to understand the complexity of modern organization. The 7-S can be divided in the different groups, the hard elements and the soft elements. The former are:

- Strategy - how an organization plans to build and maintain a competitive advantage over its competitor.
- Structure - how a company is organized (departments, teams, reporting rules, etc...).
- Systems - daily activities and procedures that staff use to get the job done.

These are easily identifiable within an organization and action by managers could influence them directly. The soft elements are:

- Shared Values - core values of the organization whom reflect its work ethic.
- Skills - actual skills and competences of organization's employees.
- Style - the leadership style adopted.
- Staff - the employees and their general capabilities.

These, being less tangible, are identified with more difficulty. They are influenced by the culture of the company rather than direct actions by management. Overlooking them is a mistake, given that they are just as important as the hard ones. Among all the elements, 'shared values' is the one placed in the center of the model pointing out the necessity for a solid cultural base existing among all the players of the organization. The lack of hierarchy could create some difficulties when applying the

model. As a matter of fact, the correlation between all the factors made make the choice of the starting point quite difficult. To overcome this issue, nowadays four steps are commonly followed when adopting this framework:

1. At first, organizations have to look to their shared values: are they consistent with the existing structure, strategy and systems? If not, what has to be changed?

2. Secondly, organizations should look at the hard elements (strategy, structure and systems) analyzing how they are supporting each others and whether something is not working properly.

3. Third step consists in the analysis of the remaining soft elements (style, skills and staff) focusing on the way they are supporting the hard elements, if they are supporting each others and if something has to be changed.

4. Once each element is analysed, the change manager has to take a step back an look at the big picture. It often happens that locally the solutions found seem to work effectively while globally they generate conflicts somewhere else. From an higher perspective it is possible to make adjustment to assure the alignment among all the elements. This step often requires several iteration in order to get an acceptable solution.

To conclude, in order to get the most from the use of this model it is recommended to set up a cross-functional team to guide the transformation. In fact, the seven elements basically cover every aspect existing within an organization and to give the right answer during each steps of the analysis it is crucial to have at least one person per block with deep knowledge of it.

Nudge Theory

A nudge is any small feature in the environment that attracts our attention and influences our behaviours. It can be considered as an expedient to alter people's behaviour in a predictable way without forbidding any options or significantly changing their economic incentives. Nudge Theory is, rather than a proper model or an end-to-end change management framework, a sort of 'choice architecture', a way of structuring choices for people. Even though the theory applies to many different fields, (probably marketing is the most interested one), Nudge Theory's concepts can lead to impressive results when applied to processes involving organizational transformation. Looking at the models seen so far, they all require the engagement from a social and psychological perspectives of the people. Nudge Theory is the explicit attempt to model the ways change enablers can psychologically and emotionally involve people in a change initiative. It rotates around the concept of 'Decision'; according to Daniel Kahneman people make decisions in alignment with two different systems:

- Automatic System - Responsible for decisions made instinctively, without much thinking;
- Reflective System - Responsible for decisions made rationally, with reasoning and thinking.

Reflective System requires the use of effort while the Automatic System is quicker and it works almost automatically. As a matter of fact, human beings tend to use the latter when dealing with extremely complex tasks or when the time is short. At the same time, the shift from the Reflective to the Automatic System is made once a person masters and understands something deeply. To sum up, people seek rules of thumb to make decision-making easier. Nudge Theory exploits this behaviour and tends to make decision-making easier, playing with human tendencies. The key concept of Nudge Theory with a view to change management discipline is that change is not presented as the only option but it is presented as a choice, or as

something inclusive, not enforced by upper management. Among different nudging techniques the seven-steps one is the most popular:

- define change;
- analyse stakeholders;
- work on plan and timelines;
- present the change as a choice / adopt inclusive decision-making;
- collect feedback;
- remove bottleneck and obstacles on the road;
- be consistent and celebrate short term wins to avoid loosing the momentum.

The first three steps and the last one are shared among different models while the other three are the most original contribution to change management theory.

Bridges Transition Model

Bridges Transition Model was developed during in 1991 by William Bridges in his book 'Managing Transitions: Making The Most Of Change'. Bridges' approach is innovative especially in the way he distinguished the change from the transition. Specifically, change is situational and objective, it is basically a new situation suddenly presenting itself. On the other hand, transition is a psychological, subjective process working at a lower pace with respect to the change. From the perspective of a person, change is related to the external context while transition regards the way the person embrace or reject the change. If managers don't help people when there is a change, the risk of disconnection between the new scenario and the employees perception of it could emerge. In other words, transition should follow, with different timeline, the same path of the change, but, if this process is not properly managed people could remain stuck in the pre-change situation, causing organizational and personal issues. Bridges theory is an attempt to model the transition process; for

this reason, it is more appropriate to talk about transition management rather than change management. Specifically, he states that every transition is a three-stage process, which consists of an ending, a neutral zone and a new beginning. A deep dive in the three phases will follow:

- Ending - Even if it seems a little bit contradictory, every transition begins with an ending. In fact, Bridges states that you can begin something new, only if you end what used to be. The first task to be done during a transition is to mark the ending clearly. If this does not happen it is extremely difficult for people to start the transition process.

- Neutral Zone - It represents the core and most critical part of the change process. Anxiety rises while motivation falls. During this phase individuals create new processes and learn what is required for the new role the are going to occupy.

- New Beginning - Involves the understanding and acceptance of a new set of values and rules. This state is associated to a high level of energy from the people who are experiencing the change; they need to be sustained in order to avoid the loss the progress made.

Chapter 2

Case Scenario

The object of the analysis will be a small-sized IT Organization, established in 2015 and working with clients and suppliers located in Europe and North Africa. The Organization adopts a functional structure where five departments exits: Operations (Ops), Quality Assurance (QA), Finance and Accounting (F&A), Human Resources (HR), Business and Partner Engagement (BPE). Each department is led by a division manager; the management of the company is made up of the division managers and the CEO. The Operations department represents the core of the Organization's business and the following analysis will be mainly focused on it.

2.1 As-is Scenario

An "As Is" analysis focused on the Operations department will be performed hereafter. Specifically, topics related to the structure of the team, business processes, methodologies and tools adopted, communication among team's members and with other departments will be covered.

2.1.1 Organizational Structure of Operations Department

Within the Operations department a flat organization exists; in fact, out of the division manager there is no hierarchy. The team is made up of:

- Operations Manager
- 5 Project Managers - directly responsible for project planning, execution, monitoring and delivery.
- 2 Solution Architects - responsible for the overall technical understanding and design of the IT solutions provided by the company.
- Customer Support Team made of 4 employees - provides support to customers who are facing problems with the solutions provided and are responsible for collecting key performance indicators related to the IT solutions.

2.1.2 Project Management Methodology

The project management methodology the Organization adopts is hybrid, taking elements from the Agile methodologies and the traditional waterfall approach. On one hand the development of the IT solutions is performed according to the Scrum framework, following an iterative life cycle. On the other side, when looking at the software life cycle, the V-model, deriving from the the waterfall project management methodology, is adopted. In addition, when looking outside the borders of the software development, it is possible to identify other phases occurring before and after the development activities. The plan-driven and adaptive approaches will be analysed separately.

Plan-driven Approach

The plan-driven approach is based on four main phases. In order to get to the next phase, predetermined project milestones have to be reached:

- Pre-project Phase - consists of all the activities to be performed before the beginning of the development of the IT solution. During this phase the appointed project manager drafts the Project Initiation Document (PID) where the project scope, project team, success criteria and overall estimate of cost and time are defined. The PID represents a guide both for the project team and the stakeholders involved. The approval of the PID, provided by the board of the Organization, is the first milestone the project has to reach in order to be get to the next stage. Since the technical skills within the Organization are limited to the competencies of the IT architects, one or more IT suppliers have to be selected in order to develop the solution. The activities of research, screening and selection are performed during this phase. In order to identify risks and plan mitigation actions, a project risk report, including a risk matrix, is drafted. A communication plan with the involved stakeholders is drafted as well. Other activities are performed by the other departments; however, for the sake of this analysis, only the key milestones have been discussed above.

- Development and Testing Phase - is performed, according to the plan-driven perspective, following the V-model for software development.

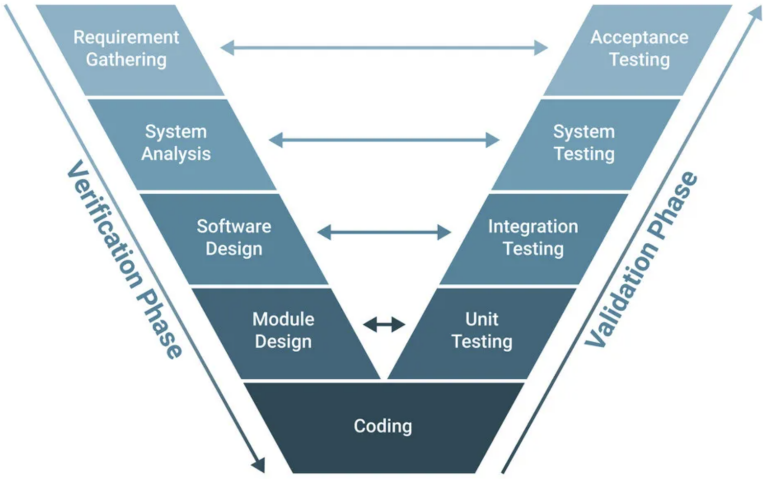


Figure 2.1: V-Model Software Development Methodology

The model consists of three main stages: verification, implementation and validation. The verification consists of four phases related to the project definition:

- Requirements Analysis - consists of the collection of the requirements from the customers (user requirement specifications).
- System Design - from the user requirements the developers/analysts obtain the software specification (technical requirement specifications).
- Architectural Design - the high level design of the IT solution is developed. Data transfer and communication between the internal modules and with other systems is understood and defined in this stage.
- Module Design - also referred as low level design, consists of a more detailed comprehension of the single modules defined in the previous phase. An effort is made in order to assure compatibility among the modules.

Once the definition of the project is completed the implementation (coding) of the solution could begin. From the project management perspective, this phase is conducted according to the Scrum framework. Once the coding is completed the solution is ready to be tested. This activity consists of four phases, each of them directly linked to the ones of the project definition phases:

- Unit Testing - consists of testing the entities defined during the module design phase. The goal is to verify the functioning of the different parts of the solutions when isolated from the rest of the code.
- Integration Testing - associated to the architectural design, the goal is to test the communication and interaction among the different modules of the solution.
- System Testing - directly associated to the system design phase, the team tests the proper functioning of the whole system and the interactions between the solutions developed and the external environment (compatibility tests).

  - Acceptance Testing - the last phase, is associated to the user requirement specifications; it involves testing the solution within the user environment. The test is successful if the expectations of the customer are fully satisfied.

  At this stage is necessary to mention that the Organization uses three separated IT environments, which can be seen as virtual building spaces where the team can work on the solution. The development environment consists of a set of tool, resources and software where the development team writes the code of the solution; afterwards, the solution is tested within the testing environment. Then, when results associated to the testing are positive, the solution is deployed in the production environment, where it can be entirely utilized by the customer. Therefore, once the solution has been fully tested it goes-live (deployed in production environment) and is ready to use.

- Hyper-care Phase - Once the solution is delivered, unforeseen issues and bug could be detected despite the tests. To this end, during this phase the Organization closely follows the customer during its first steps using the developed solution and swiftly addresses possible issues and bugs. After a period of fine-tuning, or when the number of issues and bugs is constantly below an acceptance level, the hyper-care phase is considered concluded.

- Project Closure Phase - during this phase the project documentation is collected and filed. The key performance indicator are collected and analyzed in order to get lessons for the next projects. Part of the development team is dismissed, while the other part will be involved in the maintenance of the solution provided.

Adaptive Approach

As highlighted above, the adaptive approach emerges during the implementation stage related to the V-model. In order to complete the coding phase, the Organization adopts the Scrum framework, one the Agile methodologies. The project

manager leads, as product owner, the development team made of IT consultants. The scrum master is an external consultant working for a software development company. According to the framework, the development team works better if its members are located in the same area; to this end, the external consultants and the scrum master hired for a specific project are selected from a single software development company. This does not imply that the Organization relies upon one single supplier, in fact the implementation phase of two different projects could be performed by two separate companies. In accordance to the Scrum framework the product owner manages the product backlog prioritizing the tasks to be performed and is responsible for the communication with the relevant stakeholders, both external and internal. The scrum ceremonies are rigorously applied: at the beginning of each sprint, which lasts two weeks, the sprint planning meeting takes place and the items to be developed are selected. During this meeting each member of the development team provides his/her estimated duration of the task, measured in man-days (one man-day is equivalent to 8 hours of working). An average of the estimated duration is calculated; the result will be the estimated duration of the task. Items to be developed are added to the sprint backlog as long as the sum of the estimated duration of the tasks reaches the time budget, which consists of the time constraint calculated multiplying the working days of the sprint (10) times the size of the team. For instance, if considering a eight developers team, the time budget for each sprint will be of 10 * 8 = 80 man-days. Typically, the duration of this meeting ranges between 1.5 to 2 hours. During the sprint, each morning the first task of the development team and the product owner is to participate to the daily scrum. If no blocking point are identified, the meeting lasts only few minutes, while if issues are found it could take up to 15 minutes. At the end of each sprint a sprint review meeting is held in order to analyze what went well and which are the areas of improvements for the subsequent sprints. Typically this meeting lasts 1.5 hours.

2.1.3 Supportive Tools and Software

The Organization uses a wide set of supportive tools and software in order to run day-to-day activities.

Basic Microsoft suite

Consists of the software widely adopted by almost every company worldwide provided by Microsoft: Outlook, Teams, Excel, Power Point and Word. In addition, OneDrive is adopted to store documentation in cloud.

Microsoft Azure DevOps

It is a collaborative software, suitable both for Agile and waterfall methodologies, which supports IT organizations during the management of the activities related to the software development life cycle. A wide range of activities could be performed thanks to the functionalities of the software; the ones the Organization uses are mostly related to the work of the project managers, which uses Azure DevOps as the main tool in the management of a project. The main activities performed are:

- Requirements management - user requirements and technical requirements specifications are stored, sorted, analyzed, modified, prioritized and eliminated within the software.

- Change management - project managers keep track of the change related to the project, creating a specific item within the software that describes the causes and the features of the change.

- Sprint management - project managers manage the product backlog adding, modifying, eliminating and prioritizing the items. Moreover, they plan the sprints moving the items from the product to the sprint backlog, according to what agreed during the sprint planning meeting. Monitoring over the sprints as well is performed with Azure DevOps; the developers and scrum masters

move the task from the sprint backlog to the completed list of items as soon as they are finished and insert in the system the actual completion time.

- Testing - The testing team uses Azure DevOps in order to track the tested items, the bugs and the remedial actions.

Aha!

Aha! is a Saas (Software as a Service) which is used in order to draft the road-maps of the projects and keep track of the project milestones. The road-maps implemented in Aha! include the activities related not only to the development and testing phase, but also to the pre-project, hyper-care and closing phases.

Veeva

Veeva is a document management software used to keep track of the documentation related to the projects. Specifically, the project managers upload in Veeva the documentation which can be reviewed and approved by the Operations manager. It is useful in order to properly track the key documents that have be drafted in each phases. In addition, the version history of each document is filed within the software.

Jira

Project managers uses it in order to keep track of the activities related to the Agile software development. With respect to Azure DevOps it is often used, in a more informal way, as a tool for the self-organization or for the coordination among project teams existing within the Operation department. External consultants are not provided with credentials to log in the software.

2.1.4 Project Monitoring

Within the Organization there is no standardized way to keep track of the project progresses; each project manager acts independently. Project managers rely upon a project baseline approved by the management of the Organization during the pre-project phase. However, given the level of uncertainty related to the projects, the duration of each phases is difficult to estimate. Consequently, monitoring of the projects progresses is poorly performed, especially during the pre-project, hyper-care and closure phases. In fact, the project managers actions are limited to the logging of the advancements on Aha!, the software that keeps track of roadmaps and milestones. Each project activity is a black box since no quantitative information about the actual time to completion are known as long as the activity is on-going. The estimate are associated to the qualitative judgement of the project managers. Some project managers keep track of the project updates thanks to report created on Power Point and manually updated on a weekly basis; however, given the absence of standard, policy or structured processes, it is not rare to find reports or documents related to the project progress that have not been updated for more than 3 or 4 weeks. Sometimes Jira is used to keep track of day to day activities, however it is not used with the intention to obtain metrics about the project status. The scenario is slightly different during the development and testing phase. The implementation is monitored using the tools provided by the Scrum framework: the sprint burndown chart and the product chart. Both are graphical representation of the estimated effort and the actual effort. The former adopts as timeframe the length of a sprint while the latter the whole development phase. Graphically comparing the estimated effort and the actual effort is possible to understand whether the development phase is ahead or behind schedule. Sprint burndown chart and product burndown chart are available within Azure DevOps, however, some project managers prefer plotting the charts using Microsoft Excel. Others, in order to have the time and cost estimates at completion have developed macros on Excel in order to calculate, taking into account the daily cost of the external consultants, time and cost overruns or savings.

2.1.5 Communicating, Reporting and Documenting

Communication and Reporting are along the same line of project monitoring. Essentially, the actions of a project manager are independent from the actions of the others and projects run in parallel with little and informal moments when best practices can be shared. In this way each project manager has developed his/her own approach and deliver the solution in an distinctive way. In addition, the absence of a common source for documentation templates made every project manager responsible for the drafting of the project documentation from scratch. As a consequence, a large number of differences in the form and contents of the documents have been found.

Each project manager is responsible for communicating the project status to the manager of the Operation department. This activity takes place once a week and it lasts approximately one hour. On a weekly basis the team meeting, held by the department manager, takes place. In one hour and half pending issues, updates, upcoming deadlines and miscellaneous are addressed and shared among the team members. It represents the only formal occasion of confrontation among team members.

So far, the communication routines and practices adopted within the Operation team have been discussed. Throughout the lifetime of the project, communication with the Quality Assurance department is crucial; the documents produced by the project managers have to be reviewed by the quality experts and finally approved by the QA and Ops managers. The collaboration between the departments takes place in Veeva, where comments and modification to documents could be made by both teams members. Besides the interactions happening in Veeva there is no other routines established between the departments.

2.1.6 As-is Organizational Architecture for Project Management

In order to elaborate on the topics discussed above, the structure the Organization is using in order to deliver projects is mapped. After its definition, an analysis over the related criticalities will be performed. In the end, a new solution will be proposed. It has already been mentioned that the main focus will be on the Operations team, however, Quality Assurance department will be involved as well, given its importance in documentation review and approval.

The overview over the main IT applications supporting the project managers in the delivery of the projects is provided below. Relationships among the architectural elements are mapped as well.

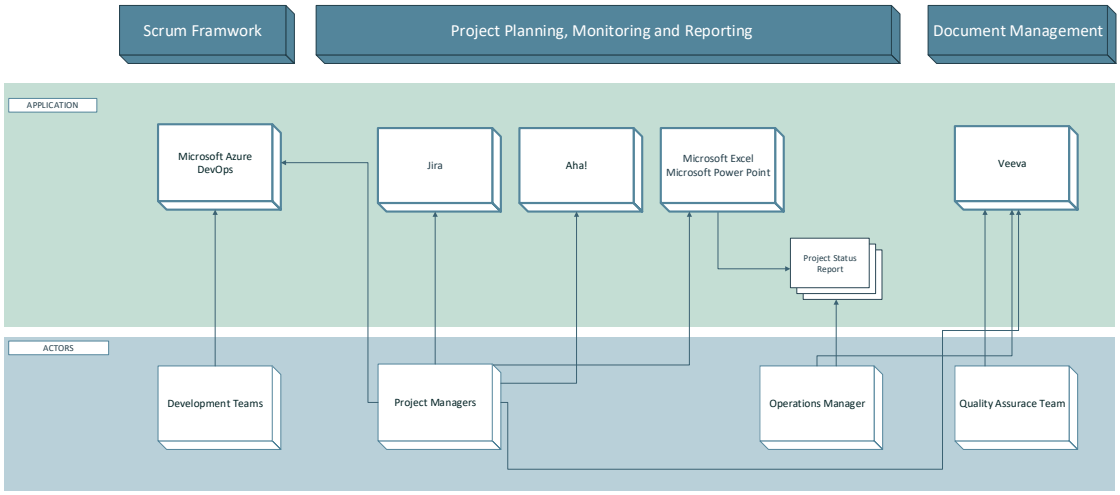


Figure 2.2: As Is Project Delivery Framework

From an high level perspective the development teams and the project managers collaborate using Microsoft Azure DevOps in order to plan and track activities related to the Scrum framework. At the same time projects managers uses Jira for the organization of their work and Aha! for the monitoring of the projects' roadmaps. Furthermore, they use Microsoft Excel and PowerPoint to provide project status report to the department manager. Veeva is used by the quality assurance

experts, project managers and Operations manager.

2.2 Criticalities of the As-is Scenario

During a period of observation, understanding and analysis of the scenario described above a certain number of weaknesses and criticalities related both to operational activities and business processes has been identified.

2.2.1 Poorly Conducted Project Monitoring

During the analysis of the "As Is" scenario, the first thing that stood out was the absence of clearly defined project monitoring practices. Regardless the quality and accuracy of the project plans, poorly conducted project monitoring generates several issues. To begin, tailored and strictly personalised project monitoring practices make the handover of project in case resignation or redeployment of a project manager difficult. Lack of efficient monitoring often generates issues that must be readily addressed by members of operations team. Resource allocation is source of problems in this scenario; without a clear overview over the project status is difficult to demonstrate to the management that the project needs more resources (in terms of time, money and personnel). On the other side project that are running ahead of schedule are not identified. As a consequence, productivity of personnel is not maximized and budget that could be spent on projects running behind schedule results locked. To sum up, it is not possible to implement resource pooling strategy, since there is not an accurate understanding of the effective consumption of resources related to the on-going projects.

2.2.2 Lack of an Efficient Reporting and Escalating Mechanism

Problems related to the reporting and escalating mechanism are directly caused by poorly conducted project monitoring. On the one hand, without quantitative metrics it is difficult to draft a report over the status of a project. On the other hand roadblocks are difficulty foreseen when there is no accuracy over the tracking of progresses and issues are often escalated only when they are extremely close in time. Moreover, the absence of an agreement over the contents and layout of the reports makes the understanding of each report a time consuming activity for the Operations manager. Besides the quality of the project report provided, the design of the reporting and escalating process does not take in account the multi-project environment where the activities are performed; each project is managed independently from the others. In other words, there is no confrontation among the projects and no aggregation among the project status reports. From an operational point of view, this leaves little room for best practices sharing among project managers. The most disruptive consequence is grasped when looking at the problem from the management point of view: there is no information about the overall performance of the team. In this scenario it is difficult to make a strategic choice or make long term commitment since large amount of Organization's budget has to be kept as emergency reserve, given the unpredictability of the out of pocket expenses. Considering a single project, the impact of a couple of weeks delay should not be disruptive for an organization; However, multiplying the impact for 10, 20 or 50 projects, material damages could be caused to the company (also from a reputation perspective). The design of the process is fallacious also considering the inverse of the process analyzed so far; in fact, there is not a quick, immediate and easily accessible way for the management to get information about the status of a project. For instance, it could happen a stakeholder or a customer is asking for the status of a project. If the project manager is not working that day the manager of the Operations team could

only provide the last report (which may not be updated with the latest news). Even if the project manager is working, producing a report is a time consuming activity that could steal precious time to the project work itself.

2.2.3 Ineffective Communication within the Team

Through the previous section it has been highlighted several time that project managers work in an independent way. This is due to the lack processes that enhance the communication among them. The first effect caused by the lack of communication has already been mentioned and is related to the sharing of projects best practices. Then, project managers mainly interact with the system architects throughout the project life-cycle. The two system architects are responsible for the system design of all the solutions proposed by the Organization. Without communication among project managers system architects result often overloaded and represent a bottleneck for the projects.

2.2.4 Ineffective Communication between the Team and the Quality Department

Communication between Operations team and Quality Assurance department is ineffective for reasons that are similar to the ones related to the relationship between project managers and system architects. As already mentioned, quality assurance experts have to review the documents produced throughout the project life-cycle. However between the departments there is no visibility over the schedule of the activities and the documents are sent for the review even if the quality assurance team is overloaded. On the other hand, time estimate about the delivery of the reviewed document are provided only on a purely qualitative basis. On top of this, during the period of observation the quality assurance team was undersized, due to the resignation of a team member. To sum up, the quality assurance team was a bottleneck, not only for its size, but also because there was no attention over the

time required by the process of document review.

2.2.5 Misuse of the Available Tools

The main project management software the Organization has adopted are systemically used below their potential. The most glaring cases are related to Azure DevOps and Jira. The former is not fully exploited since most of the the project managers does not use the monitoring tools, tailored for the Scrum framework, embedded in the software. In addition, the reporting tool, implemented in the software as well, is not utilized by any project manager. The latter, being only used as a task organizer is not exploited at all for its capabilities related to the management of agile projects and issue tracking.

2.2.6 Lack of Integration among the Architectural Elements

From the existing organizational architecture related to project management defined above, it is possible to identify some structural weaknesses that can be summarized in the lack of integration among the actors and IT applications involved. Specifically each application works independently causing issues in terms of synchronization of the information. For instance, during a sprint, when a member of the development team marks a task as done, the project managers have to manually log the progress in Jira. From an higher perspective, even updates related to the projects roadmaps have to be manually inserted in Aha!. Furthermore, when the Project Status Report have to be drafted, the information contained in the Excel and Power Point files have to be updated by the project managers as well. Two main issues are related to this structure and the lack of integration:

- Reliability of the information - Project managers rely on four different sources of information (Microsoft Azure DevOps, Jira, Aha! and the Office's programs); the probability of inconsistencies over the applications is extremely high, given that they are all updated manually. In addition, when an inconsistency is

found, it is difficult to understand which source is the reliable one. It could happen that the reliable information about the progress related to a certain activity is fragmented among different sources, making the draft of the project status even harder.

- Time consumption for activities with low added value - Logging the same information over multiple systems is a time consuming activity that does not bring benefits to the projects. In addition, considering the issue related to the reliability of information, when an inconsistency is found, even more time is spent analyzing the data stored in the applications in order to understand where the actual information is contained.

2.3 To-be scenario

The main criticalities have been addressed in the previous paragraphs. All of them, even if profoundly different in terms of contents and actors involved, share the same root cause. In fact, the underlying processes that are supposed to guide employees during their work are designed loosely or they are not designed at all. The proposed solution to this problem, and consequently to the criticalities affecting the Organization will be object of discussion in this section.

2.3.1 Project Management Office as Proposed Solution

The challenge of redesigning some of the organizational internal processes could not be a one off activity. On the one hand, process review and redesign is inherently iterative, necessitating an approach where the study of the best suitable solution, the explanation and enforcement of the new processes to the team, the fine tuning and collection of the result take place constantly, in a perspective of continuous improvement. On the other hand, the redesign of a process can lead to the necessity to

change the framework of the organization as well. From another perspective, sometimes the problem is intrinsic to the organizational structure; therefore, the only way to solve it is changing the organizational structure itself (and the interested processes). Considering the "As Is" scenario the absence of a middle layer between the team members and the operations manager has been identified as a topic that has to be addressed, together with the issues related to the internal processes. The absence of a middle layer and the fallacious design of the internal processes could be seen as two sides of the same coin. To sum up there was the necessity to establish within the Operations team an entity constantly able to redesign and review the internal processes in order to improve and optimize the workflow. In view of the premises, the implementation within the Operations department of a project management office has been identified as a resolutive initiative in order to address the criticalities discussed in the previous section.

2.3.2 Level of Influence of the Project Management Office

Different types of project management office could be implemented according to the level and area of influence. In the case study considered in this analysis, the leeway allowed to the proposed solution was not wide. Given the guidance from the management, and the fact that PMO was going to be implemented from scratch, the level of influence over the work performed by the Operations team was planned as low-medium. In particular, activities related to the directive function were out of scope. It means that its authority is limited to the supporting of the project managers and controlling over the compliance with the project management framework and with the redesigned processes. The extension of the PMO area of influence will be object of discussion between the management, Operations team and the PMO after its initial implementation.

2.3.3 To-be Organizational Architecture for Project Management

The initial steps of the process analysis consisted in the definition of the existing architecture and in the identification of the associated criticalities. Taking those information as input a new architecture related to the projects delivery has been design. The main focuses of the design process was on:

- reducing the bottlenecks involving quality assurance team and IT architects;
- improving the quality of project monitoring;
- guaranteeing a greater level of integration among the IT systems in order to increase the reliability of the information and reduce the waste of time;
- quickly providing reliable project status report to management;
- enhancing communication within the operations team and with the other departments.

During the Operations team meetings, planned in order to discuss about points of improvements of the existing architecture, the lack of the necessary set of supporting tools to properly address the criticalities, emerged. Specifically, the IT applications involved were supplied by four different companies, making the integration among them difficult to realize. Therefore, a market research over suppliers able to provide modular applications able to connect with each other, was performed. Among the possible candidates Atlassian was chosen; the choice was driven by the fact that Atlassian was the provider of Jira, a tool which the Company was already using. The deal with Atlassian made the integration among systems possible thanks to the implementation of new software: Smartsheet, Confluence, Resource Management Tool by Smartsheet and two connectors. At the same time, it emerged that the use of some other tools related to project delivery was unnecessary. For this reason Aha!, Microsoft Excel and Microsoft Power Point were taken out from the architecture.

On top of this, the use of Jira and Azure DevOps have been redesign in order to better exploit the capabilities of the software. The design of the new architecture can be found below, an analysis of the new software and the relationship among them and the main actors in the Organization will follow.

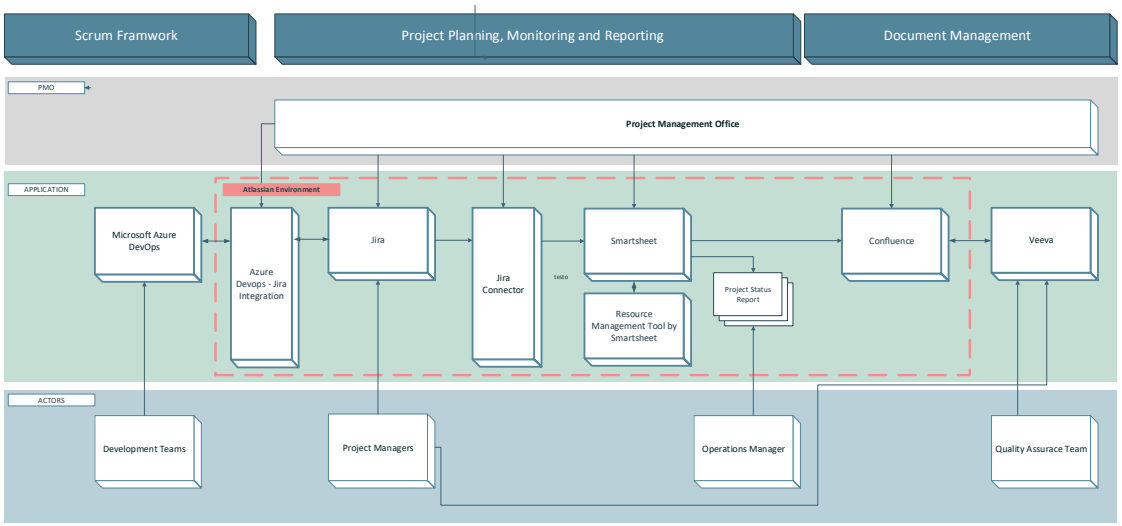


Figure 2.3: Re-engineered Project Delivery Framework

Re-designed Use of Azure DevOps

In order to distinguish the monitoring of the development activities related to the Scrum framework from the others associated to the whole project life cycle, the usage Azure DevOps has been re-designed in accordance to the V-model framework. Besides the development activities, the planning, scheduling and tracking of the testing activities is performed within the software as well. In this way, a better usage of the software capabilities is granted. For developers and testers (both external consultants), the software will be the virtual place where interactions with the environment of the Company takes place. Specifically, it will be the point of reference for what concerns the technical activities. Developers and testers will track their progress exclusively within Azure DevOps. On the other hand, even if project managers are granted with access rights to Azure DevOps, they will mainly use Jira.

In this way, the work of technical teams is separated from the work of the project managers, which have to take into account also other aspects out of the technical ones.

Re-designed Use of Jira

The use of Jira will be extended to every tasks related to project management activities. Project managers can create, modify, and log the progresses of the tasks within the application, without the necessity to updates any other systems. Keeping every task related to a project in a single, but organized place, allows the project managers to have a complete and extensive overview on the work to be performed. On this wise, the scheduling of every task is performed easily and mitigating actions in case of road blocks are swiftly logged into the systems. From a simple tool used for self-organization, Jira re-designed aims to connect technical and business sides. For this reason, the entire control over the tool is assigned to the project managers. The software is linked to Azure DevOps thanks to a tool provided by Atlassian, called Azure DevOps - Jira Integration

Function of Azure DevOps - Jira Integration

As explained in the previous two paragraphs, developers and testers work exclusively on Azure DevOps, while project managers performs their activities on Jira. However, the communication between technical teams and projects managers is absolutely necessary in order to deliver the projects; this implies that Azure DevOps and Jira have to be synchronized. The two software cannot be directly linked. To this end, the use of a third software, is necessary. The solution to this problem is directly provided by Atlassian through Azure DevOps - Jira Integration. Thanks to this tool every modification that is made in Azure DevOps is reflected in Jira in real time. The opposite works as well.

Use of Smartsheet

From the perspective of the IT applications, Smartsheet could be considered the core of the new architecture. Its implementation should address the issues related to project monitoring, reporting and problems escalation. Thanks to Smartsheet the roadmaps of each project will be stored in a unique place and monitored directly by the project management office, granting for their reliability. Through the application it is possible to have an overview over a project according to different level of granularity; depending on the requests, it is possible to obtain both metrics about the items developed during a sprint and a the number of project milestones achieved considering the whole life cycle; through many customization, monitoring is performed both from an high level and low level perspective. Furthermore, progresses of projects can be aggregated in order to get insightful information about overall performance of the Operations departments. Comparisons among projects are possible as well; in this way it is possible to obtain an overview on the resource usage. This takes place thanks to the the Resource Management Tool, which will be object of analysis in another section. In relation to the issue related to the reporting process, a specific section exists. Within this section it is possible to design tailor-made dashboards containing key metrics of a project or a group of projects. The dashboards use as input data taken directly from Smartsheet; therefore, project managers will no longer be asked to manually update PowerPoint presentation since the process will be automated within the application itself. To grant a certain level of flexibility, project managers can leave comments associated to the elements of the dashboards in order to better explain the status of a project. From the perspective of the management, dashboards in Smartsheet are easily understandable and they can be obtained in any moment without the intervention of the project managers. Furthermore, the design of the dashboards is the same for each project; on the one hand this is helpful in terms of readability and comparison among the projects; on the other hand dashboards can be provided to relevant stakeholders and customers

without the need of any time consuming re-elaboration. Besides the increased reliability of the project status report, the greatest advantage generated by the new process is related to the waste of time reduction associated to the reporting automatism. With respect to the scenario described in the "As Is" scenario the following activities will be eliminated, or their duration drastically reduced:

- elimination of activities related to the manual update of the project status report files on Excel or PowerPoint;
- reduction of the duration of the meeting between operations manager and project managers to present the project status report;
- elimination of the activities related to the re-elaboration of the project status information, performed when presentations to stakeholders or customers have to be provided;
- elimination of activities related to the request for a project status report outside the weekly meeting between operations manager and project managers.

As mentioned at the beginning of the paragraph escalation of problems can be performed within the application. in fact, through Smartsheet is possible to log the roadblocks related to a project and classify them according to a pre-determined level of urgency. Thanks to alert rules that can be set, the actors involved in the issue can be notified immediately. The notified person can address the issues, providing guidelines or taking actions for resolution. In this way rapid escalation and resolution is granted, while the log of this process is filed within the application and available to the other project managers (in case they face similar road blocks). The utility of Smartsheet is related also to the project planning phase. Together with the project managers project baseline could be designed directly in the application. The benefit related to this activity are mainly two:

- deciding the project baseline together with the project management office allows project managers to make considerations about the projects already in place,

anticipating possible bottlenecks in relation to the work of the quality assurance team and the IT system architects. For instance, if the due date for a project documentation review of two projects is set for the end of May, a project manager who is deciding the baseline for a third project will have visibility over this information and can decide upfront to avoid the end of May for activities that involve the Quality Assurance department.

- Since it is possible to review, comment, propose modification and approve project elements in Smartsheet, the management can perform this kind of activities directly within the application. In this way, every information provided by the management is logged in the application and project managers can swiftly make changes to the project baseline.

Jira for Smartsheet Connector

Inputs in Smartsheet are provided on the one hand by the PMO, the project managers, and the Operations manager; on the other hand, the data analyzed and collected by software have to be taken from Jira. To this hand, Atlassian provides a specific tool, named Jira for Smartsheet Connector, able to link the two software. Basically, the tool could be configured in three different ways:

- two ways data flow - changes in one the systems are mirrored in the other one;
- one way data flow from Jira to Smartsheet - changes in Jira are mirrored in Smartsheet, while changes in Smartsheet do not impact Jira;
- one way data flow from Smartsheet to Jira - changes in Smartsheet are mirrored in Jira, while changes in Jira do not impact Smartsheet.

In this case, the selected option was the second one. Throughout the whole project life cycle project managers are rarely supposed to use Smartsheet, while they track the project progresses on Jira. In order to avoid the generation of incongruities from Smartsheet, it has been decided to not configure the gateway from Smartsheet to

Jira. Regardless the decision taken, data synchronization from Smartsheet to Jira can be performed anytime, re-configuring the connector.

Confluence

Within Confluence project documentation is stored and cataloged. With respect to OneDrive, the application provided by Microsoft for document storage, Confluence is designed in a more intuitive way. It looks like a website with an home page and sections that can be visited. Advanced research functions are available; in fact, it is possible to search for words or phrases contained in a document and not only in the title. In addition permission to edit and view can be assigned in relation to a specific section of the application. Two main sections are foreseen for this applications: the PMO one and the projects one, which contains separated pages for each project.

- PMO section - It is managed and updated by the project management office and contains the templates related to the project documentation. In fact, one of the main objectives of the PMO is to control over the compliance to a predetermined project delivery framework. To do so, the necessity to provide to all project managers the same templates for project documentation (such as project initiation document) emerged. Editing privileges for this section are granted only to the project management office, since modification to the templates must be approved by PMO itself, the majority of project managers and the quality assurance department. Project managers can log into Confluence and download the templates necessary in order to develop a project. Furthermore, the space in Confluence is organized in a way which is similar to the one of a website: there is an home page where news, best practices and daily reminder from the PMO are share; then, browsing in the application several sections related to different phases of project life cycle can be found; within each section the relevant templates are filed. Besides the templates, project managers can consult the guidelines uploaded by the PMO covering topics related to the compliance with the project management frameworks the company

is implementing. For instance, accessing to the section associated to the development phase, it is possible to find references to the Agile methodology and the Scrum framework.

- Projects section - It is directly managed by the project managers that update the pages associated to the projects they are following. As mentioned above, permissions to edit and view can be granted individually for each page and document. In particular, the permission to edit a page that is referred to a specific project is granted exclusively to the project manager who is assigned to the project. Similarly to the PMO section, the main page of a project resembles to the homepage of a website. Project managers can decide to share relevant updates and feedback to shareholders in order to enhance the visibility over his/her project. Project managers are supposed to upload the filled projects documents in the assigned section in Confluence; afterwards, within the application, IT system architects and operations manager perform a documentation review in order to tackle the possible disputed points. On this wise, the work of Quality Assurance department is eased. Once a document is approved by every relevant actors, the final version is updated in Confluence.

Resource Management Tool by Smartsheet

Thanks to the Resource Management Tool, it is possible to map in Smartsheet the workforce of the Organization and monitor the resource utilisation and scheduling. The tool is separated from Smartsheet, however real time data integration can be configured. When the project scheduling is performed the project managers assign to each tasks the resources needed to complete it. An estimate of duration is provided as well; since Smartsheet and the Resource Management Tool are connected with each others, on one side project managers have real time visibility over the resource usage, on the other hand, scheduled resources have a visibility over the work to be performed. Given that resources (such as quality assurance experts)

could be scheduled on activities that are not strictly related to the project delivery, there is the possibility for them to block a percentage of the weekly working time. In this way project managers can consider the actual amount of time the resources can work on a project. To wrap up, the use of the Resource Management Tool and its integration with Smartsheet enhance the visibility of the resource utilisation and scheduling; on the one hand, logging into Smartsheet it is possible to identify which are the resources scheduled on the projects; on the other hand, from the Resource Management Tool it is possible to have the resource's perspective, identifying the projects a resource is working on and its utilisation. Furthermore it helps the personnel in the organization of the task to be performed. In the end, the resources can insert the actual time spent in order to complete a task; this information is registered into Smartsheet and elaborated through a specific dashboard. In this way project managers can understand whether they are under o overestimating the budgeted time for a task.

Chapter 3

Implementation of PMO

Mapping and analysing the status quo has been a necessary activity, performed in order to identify the main criticalities existing related to the project delivery workflow. At the same time, the design of a possible solution to the criticalities, conceived taking into account the constraints established by managements guidelines, Organizational resources and personnel has set the end point. However, the transition from one scenario to the other could not be immediate and has to be properly planned, implemented and monitored. To this end, taking into account the best practices for PMO implementation and the most popular change management frameworks a specifically designed model has been conceived and implemented in order to ensure the best conditions for a successful transition.

3.1 PMO Implementation Guiding Coalition

Before the description of the implemented framework, it is necessary to describe who are the change enablers and promoters. Despite the selected model, the formation of a coalition is the first step to take in order initiate a project, no matter its kind. In this case, the PMO implementation was an initiative of one project manager pertaining to the Operations department; the manager of the Operations

team showed enthusiasm and decided to allocate three interns in order to develop the project. The last step in order to initiate the implementation of the PMO consisted of the approval by the board of the Organization, which was swiftly obtained after a specific meeting with the involved stakeholders. To sum up, the coalition was made of the Operations manager, one project manager and three interns. At the same time, the PMO implementation was backed by the management of the Organization. From an high-level perspective, the roles associated to each member of the guiding coalition in relation to the PMO implementation are listed below:

- Operations manager - He is not directly involved in the project, but provides support to the initiatives proposed by the other members of the coalition.

- Project manager - Coordinates the activities related to the implementation of the PMO and provides support to the interns in the daily tasks. She is responsible for the outcome of the project.

- Interns - Provide support through the analysis of the as is scenario, the design of the solution and the operative tasks.

3.2 Design of the Implementation Framework

In order to initiate the transition process, a framework, based on the state of art review conducted in the first chapter, had to be defined. The framework consists of the practices and guidelines that have to be followed in order to achieve the end goal of the transition. The state of art review represents a solid starting point, where models and guidelines could be taken; however, since the models have, by definition, a general purpose, they need to be re-elaborated according to the existing case scenario. This activity will be described hereafter.

3.2.1 Selection of a Change Management Model

The choice of a change management model was based on the type of transition that had to occur. In particular, the main characteristics related to the change are listed below:

- It is a transformational change - Even if other organizational functions are involved, the change mainly impact the Operations department and it is managed exclusively by a team of employees pertaining to the function.
- It involves the management of two elements - The first one is strictly technical and is related to the implementation of the new tools and software. The second one involves the individual change associated to the personnel of the Organization (particularly to the project managers),

In addition, the selection of the proper change management model has taken into account the characteristics of the Organization, such as the its size and the existing competencies of the personnel of the Operations team associated to change management topics. Considering the above, the Prosci Methodology and the ADKAR model have been chosen as a reference in order to drive the Operations department throughout the transformational process. The main reason behind this choice is related to the duality of the Prosci Methodology (organizational and individual perspective); besides the technical aspects that are related to the organizational perspective, a specific focus on the project managers was necessary for a successful transition. The main challenge was, in fact, related to their involvement in the process. In other words, the newly designed system will result ineffective if the projects managers continue working in the same way. ADKAR allows the change enablers to constantly monitor their involvement in the project, limiting the resistance to the change.

In addition to the reasons discussed above, some of the models analyzed in the first chapter have been excluded for different reasons; Lewin's model was not considered suitable, given the lack of a clear approach to address individual change. In other

terms, it was too simplistic. On the other hand, McKinsey 7-S model was considered too complex for the needs of a small organization; in fact, it is recommended for organizations with higher degree of complexity. Given the competencies of the personnel, the approach proposed by the nudge theory was discarded.

3.2.2 Influence of Kotter's Studies and PMO Implementation Best Practices

ADKAR model was selected as a reference to drive the transformational process; however, in order the create the best conditions for the transition different elements were taken from Kotter's contribution to change management and the best practices for the PMO implementation. Kotter's developed, out of 8 commonly made mistakes, an 8-step model to drive change into organizations. Even though the 8 steps are one after the other, there could be an alternative way of interpreting them. The order of some of the steps could be inverted, or two (or more) steps, could executed at the same time. This happens because the 8-stages have been conceived as actions intended to directly prevent the risks deriving from the 8 mistakes. However, even if the 8 mistakes are made following a chronological order, the actions intended to mitigate or prevent them do not necessarily have to be executed in the same order. Moreover the actions taken in order to mitigate the risks related to the mistakes could be planned during the first stages of a transition and are mainly repeated throughout the whole process. In this respect, Kotter's contribution has been used as a sort of checklist in order to properly identify actions that were driving the transition towards one of 8 mistakes. From a practical standpoint, whenever a decision had to be taken, the change enablers always used to ask themselves whether the consequences of the decision could lead to one of the mistakes. The same logic is applied considering the best practices for PMO implementation; actions have to be planned and taken only if they promote the application of the best practices.

3.2.3 Organizational Wide Activities

Prosci methodology is focused both on the individual change and the organizational change. The individual change has been previously discussed and will be addressed through the ADKAR model. The technical activities related to the PMO implementation will be performed concurrently with respect to the ones related to the individual change. The two standpoints are interconnected, in fact there are tasks associated to the organization wide standpoint that could promote and support the individual change as well.

3.2.4 Project Management Approach for PMO Implementation

Considering the lifecycle framework for the PMO implementation, the proposed approach is hybrid. The main reason behind this choice is related to the duality discussed above (personal change and organizational/technical activities). The personal change, specifically managed through the implementation of the ADKAR model follows an adaptive approach, while the part of the implementation plan which is related to the technical activities, the set up of the system and draft of documentation follows a predictive approach. In more details, personal change could be supported and encouraged through several activities; however, each individual responds differently from the others making the upfront schedule a difficult activity for the change enablers. Rather than spend time upfront drafting a detailed, but improbable project baseline, the change enablers preferred to define, from an high level perspective, the possible time estimate related to the phases of the ADKAR model (Awareness, Desire, Knowledge, Ability, Reinforcement) and to design, for each of them, specific activities in order drive and promote the individual change. On the other side, tasks related to the technical and organizational side of the transformation could be planned and scheduled upfront, given the lower risk associated to the reaction of the employees towards the change. The technical activities should

not be considered separated from the ones focused on individual change; in fact, their goal is to support and enhance the individual change creating the best conditions for project managers to embrace it. Their on time completion is fundamental; if the group of project managers is ready to go from one ADKAR's stage to the next one but the activities that are supposed to support that stage are not completed, the individual change process is blocked and the risk of loosing the momentum is relevant.

3.3 Project Roadmap

In accordance with the approach presented in the previous section, the proposed roadmap includes the two standpoints discussed.

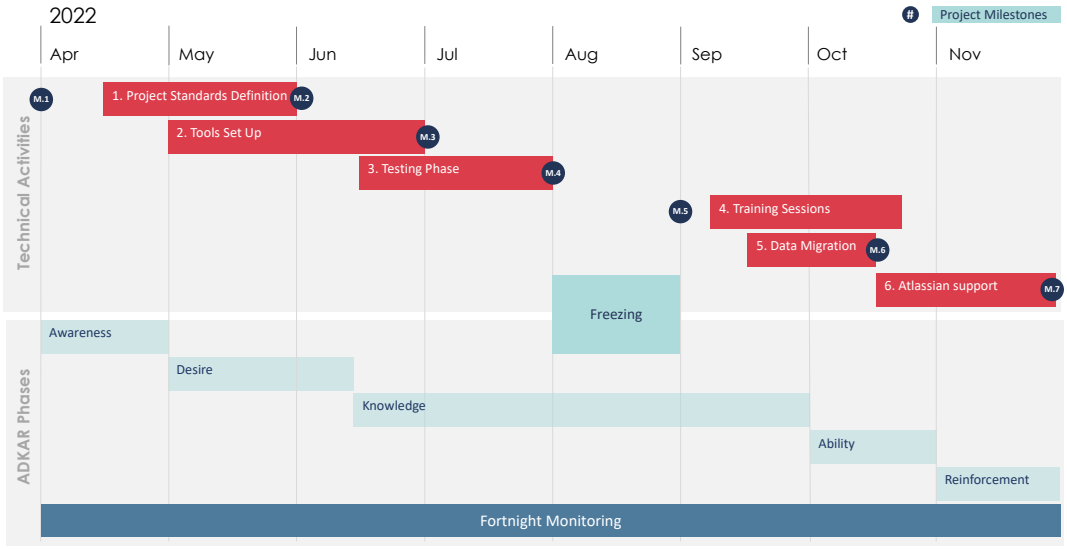


Figure 3.1: Project roadmap

Projects milestones

M.1 Kick-off Meeting

M.2 Completion of Project Standards Definition

M.3 Completion of the Tools Set-up

M.4 Test Completion

M.5 Mid-term meeting

M.6 Completion of Data Migration and Deployment in Production

M.7 Project Closure

3.3.1 Project Plan for Phases Related to Technical Activities

The project plan related to technical activities is discussed hereafter. For the sake of simplicity, each phase will be addressed individually.

Project Standards Definition

PMO is supposed to provide to project managers standardized practices and documentation. To do so, an agreement among the project managers, the board of the Organization, Quality Assurance department and the PMO has to be reached. The final goal of this phase is to reach this agreement, granting to the PMO a reliable and accepted set of documentation and best practices. The following tasks have to be performed during this phase:

1.1 Projects Documentation Collection - The project managers are asked to provide to the PMO the existing documentation related to the concluded and on-going projects. At the same time, PMO will categorize the documentation according to the project phase each document is supposed to address. The end goal of this activity is to have a set of documents, grouped by their scope and lifecycle phase.

1.2 Requirements for Project Documentation - Out of the collected documentation, the PMO drafts a bullet list for each document type. The bullet list summarizes

the requirement each template is supposed to have, according to pre-existing documents. Then, the requirements are sent to the project managers and QA experts, which individually evaluate whether some of them have to be eliminated or anything is missing. Afterwards, a meeting is planned in order to get the final list of requirements for each project template.

1.3 Template Drafting - Out of the final list of requirements PMO will draft the first version of each template.

1.4 Internal Template Review - Once the templates are ready they are shared with project managers which will provide a feedback over the first versions. The feedback will be considered by the PMO, which will edit the affected templates accordingly.

1.5 QA Template Review - The templates, approved by the project managers, are sent to the QA department which will review them in order to assure compliance with the implemented project management frameworks. Any issue will be addressed by the PMO.

1.6 Management Template Review - Management of the Organization will review the templates for the final approval. Any issue will be addressed by the PMO.

1.7 Collection of Guidelines and Best Practice Related to the Implemented Frameworks - PMO will perform a wide research over multiple sources (Internal Database, Projects Database, Internet) in order to get the documentation related to frameworks and project managements methodology the Organization is adopting or is planning to adopt.

1.8 Review of Project Management Frameworks Documentation - The final goal of this activity is to create a knowledge database, managed by the PMO, where the personnel could access to useful information about the way projects are delivered within the Company.

Within the project standard definition phase, besides the activities described above, intermediate milestones have been planned.

PM.1.1 Final List of Requirements for Each Project's Templates

PM.1.2 QA Templates Approval

PM.1.3 Management Templates Approval

PM.1.4 Complete set of PM Framework Documentation

Predecessors, duration estimate, start and end date estimate are provided below, for each task. Predecessors belonging to a different project phase will be discussed at the end of this section

Task	Predecessors	Duration [days]	Start Date	End Date
1.1		7	11/04/22	19/04/22
1.2	1.1	5	20/04/22	26/04/22
1.3	PM.1.1	12	27/04/22	12/05/22
1.4	1.3	3	13/05/22	17/05/22
1.5	1.4	8	18/05/22	27/05/22
1.6	PM.1.2	5	30/05/22	03/06/22
1.7		10	11/04/22	22/04/22
1.8	1.7	8	25/04/22	04/05/22

Table 3.1: Project standards definition activities

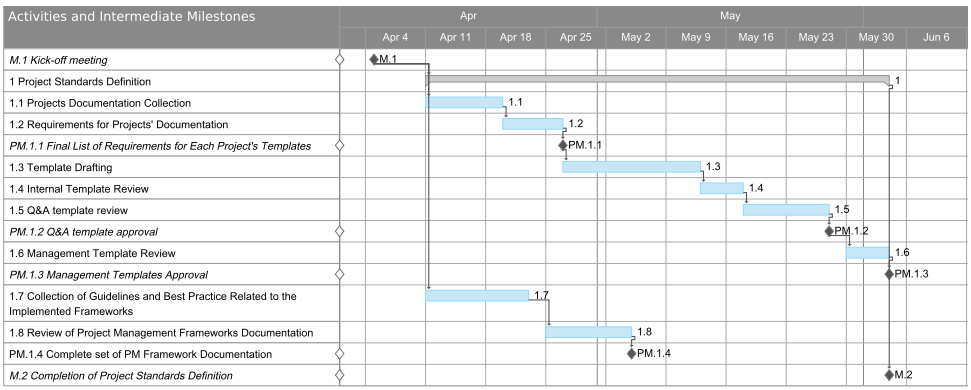


Figure 3.2: Project standards definition phase gantt chart

Tools Set Up

The set up of the tools includes not only the configuration of the IT systems, but also the preliminary training that PMO personnel have to go through in order to acquire the specific competencies for the usage of the tools.
The tasks planned within the phase are:

2.1 Set Up of Testing Environment in Azure DevOps - Azure DevOps is used, in the as is scenario, both by project managers and developers. In order to properly configure the system for the to be scenario, it is necessary to create a separate environment, where the PMO could develop the intended features.

2.2 PMO User Provisioning for the New Tools - Atlassian, the vendor of the new tools, provides privileged user access to the PMO personnel for Smartsheet, Jira, Resource Management Tool and the two connectors.

2.3 Set Up of Testing and Production Environments in Smartsheet and Jira - Consists of the configuration of two separate environments for the two tools. In this way, program changes and developments could be test in a dedicated environment before their deployment in production.

2.4 Jira and Smartsheet training for the PMO - PMO is aware of the capabilities of the new tools; however, specific online training for the PMO implementation in Smartsheet and Jira are necessary in order to familiarize with the software.

2.5 Confluence training for the PMO - In analogy with the task 2.4, this task consists of specif training for PMO implementation on Confluence.

2.6 Resource Management Tool Training for the PMO - Online training for PMO on the use of the Resource Management Tool.

2.7 Interfaces Configuration - Configuration of the systems interfaces between:

- Azure DevOps and Jira;

- Jira and Smartsheet;
- Smartsheet and Resource Management Tool.

2.8 Azure DevOps Configuration for the PMO - Each project planned or on-going within the company is created in Azure DevOps. Sections for sprint planning and monitoring and for testing are configured and existing data related to the projects sprint backlog are imported in the testing environment.

2.9 Smartsheet and Jira Configuration for the PMO - Models for PMO is configured within Smartsheet and Jira. Logic for project planning and automated monitoring are implemented as well.

2.10 Confluence Configuration for the PMO - Within the tool, sections related to project templates and project management methodologies documentation are created.

2.11 Projects Roadmap Implementation in Testing Environment - Roadmap from Aha! are imported in Smartsheet testing environment and linked to Azure DevOps projects through Jira

2.12 Dashboard Configuration in Smartsheet - Dashboard containing projects key metrics indicator, useful for project managers and Organization's management are configured.

Intermediate project milestones:

PM.2.1 PMO training completion

PM.2.2 Completion of Confluence Configuration

PM.2.3 End-to-End Configuration in Testing Environment

Predecessors, duration estimate, start and end date estimate are provided below, for each task. Predecessors belonging to a different project phase will be discussed at the end of this section

The timeline for the tools set up phase is provided below.

Task	Predecessors	Duration [days]	Start Date	End Date
2.1		2	02/05/22	03/05/22
2.2		3	02/05/22	04/05/22
2.3	2.2	4	05/05/22	10/05/22
2.4	2.3	15	11/05/22	31/05/22
2.5	2.2	4	05/05/22	10/05/22
2.6	2.4	1	01/06/22	01/06/22
2.7	PM.2.1	7	02/06/22	10/06/22
2.8	2.7	5	13/06/22	17/06/22
2.9	2.7	10	13/06/22	24/06/22
2.10	2.7	3	13/06/22	15/06/22
2.11	2.7	6	13/06/22	20/06/22
2.12	2.11	8	21/06/22	30/06/22

Table 3.2: Tools set up activities

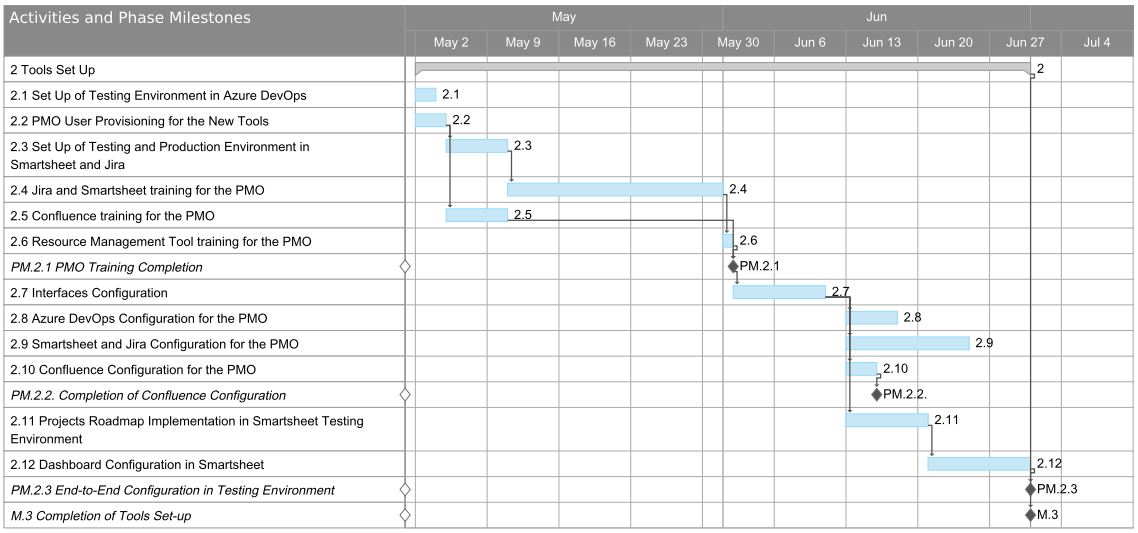


Figure 3.3: Tools set up phase gantt chart

Testing Phase

The end goal of the testing phase is to verify the effective functioning of the developed solutions. Top this end, the following activities are planned:

3.1 Test Planning - Tests to be performed are planned upfront during this activity.

3.2 Unit Testing - Each individual functionality within Smartsheet, Jira, Azure

DevOps, Confluence and Resource Management is tested.

3.3 Interface Testing - Data transfer between the three interfaces is tested in order to prove its the completeness and accuracy.

3.4 End-to-End Testing - Relevant workflows are tested to prove the effective integration among the IT systems.

3.5 Execution of Corrective Actions and Test Re-performance - After the drafting of a test report, the possible corrective actions are implemented and the affected tests are re-performed.

Intermediate projects milestones are:

PM.3.1 Draft of the Test Plan

PM.3.2 Draft of the Test Report

Predecessors, duration estimate, start and end date estimate are provided below, for each task. Predecessors belonging to a different project phase will be discussed at the end of this section

Task	Predecessors	Duration [days]	Start Date	End Date
3.1		8	13/06/22	22/06/22
3.2	PM.3.1	5	23/06/22	29/06/22
3.3	3.2	4	30/06/22	05/07/22
3.4	3.3	8	06/07/22	15/07/22
3.5	PM.3.2	PM.3.2	18/07/22	29/07/22

Table 3.3: Testing activities

The timeline for the testing phase is provided below.

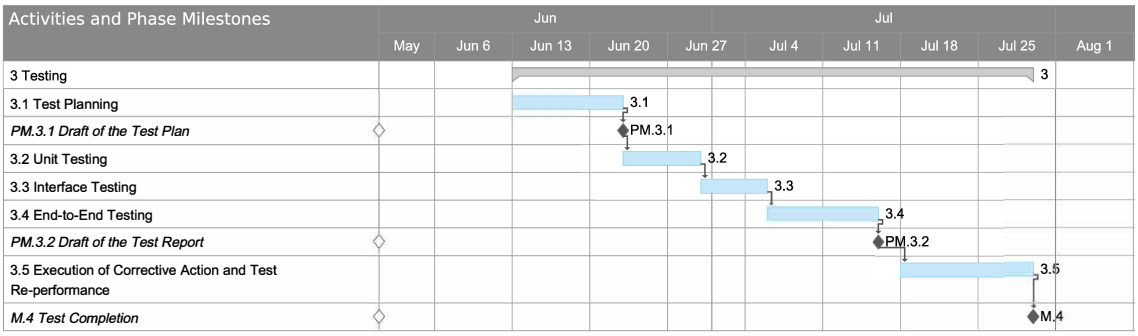


Figure 3.4: Testing phase gantt chart

Training Sessions

Once the systems are ready to be used and PMO has developed the necessary competencies, the affected personnel of the Company can be trained, in order the shift from the old to the new framework. The training phase relies on the following activities:

4.1 Online Smartsheet and Jira Training for Project Managers - To familiarize with the tools, project managers are asked to watch online interactive training on Smartsheet and and Jira. The training are directly provided by Atlassian.

4.2 Confluence Training for the Organization Personnel - Training on Confluence is provided directly by the PMO. It is addressed to each employee of the Organization, as everyone may need the information filed in the system. For this reason, everyone is granted with a read-only account.

4.3 Atlassian Training Sessions for Project Managers and PMO on Smartsheet and Jira - Once projects mangers have grasped the basics, three two-days long training sessions are planned with an Atlassian consultant. The sessions require the presence of project managers in the office. PMO staff is required as well, in order to refine their knowledge of the tools.

4.4 Online Resource Management Tool Training for Project Managers, QA personnel and IT Architects - The online training is directly provided by Atlassian.

The affected actors (Projects Managers, QA personnel and IT Architects) are required to attend the course to familiarize with the tool.

4.5 Atlassian Training Session on Resource Management Tool - A one day session with an Atlassian consultant is planned in order to deepen the topics introduced during the online course and address any possible issue.

The intermediate milestones related to this phase are:

PM.4.1 Confluence Training Completion

PM.4.2 Smartsheet and Jira Training Completion

PM.4.3 Resource Management Tool Training Completion

Predecessors, duration estimate, start and end date estimate are provided below, for each task. Predecessors belonging to a different project phase will be discussed at the end of this section.

Task	Predecessors	Duration [days]	Start Date	End Date
4.1		12	13/09/22	28/09/22
4.2		3	27/09/22	29/09/22
4.3	4.1	15	29/09/22	19/10/22
4.4	4.1	3	29/09/22	03/10/22
4.5	4.3; 4.4	1	20/10/22	20/10/22

Table 3.4: Training sessions activities

The timeline for the training sessions phase is provided below.

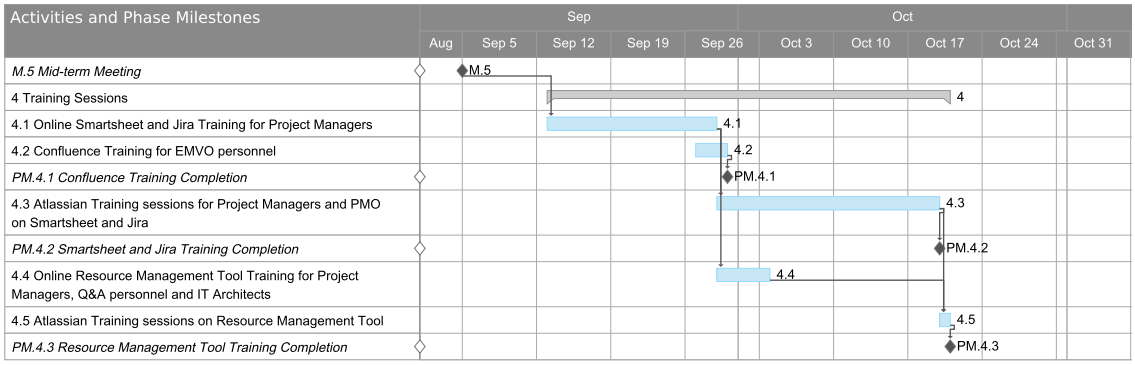


Figure 3.5: Training sessions phase gantt chart

Data Migration and Deployment in Production

This phase consists of the migration of the data from the existing system to the ones in scope for the transformation. The on-going projects in the testing environments of the new tools are deployed in the production environment. Activities associated to this phase are:

5.1 OneDrive Back-up - Back-up of the data filed in OneDrive. After the migration, the data will not be deleted from OneDrive, however this activity is necessary, considering the possibility to compromise source data during the migration.

5.2 OneDrive to Confluence Migration - Effective data migration from OneDrive to Confluence.

5.3 Back-up of the Affected Systems (except OneDrive) - For the same reasons discussed in above, Azure DevOps, Smartsheet and Jira will be object of back-up before the deployment in production

5.4 Azure DevOps, Smartsheet and Jira Deployment in Production Environment - The tested items related to this tools are deployed in the production environment. The deployment in production will follow the order established by the designed workflow. In other words, Azure DevOps is planned to be the first to be deployed, Jira will follow. In the end Smartsheet will the deployed in

production.

Intermediate milestones associated to this phase are:

PM.5.1 Confluence Migration Completion

PM.5.2 End-to-End Deployment in Production

Predecessors, duration estimate, start and end date estimate are provided below, for each task. Predecessors belonging to a different project phase will be discussed at the end of this section

Task	Predecessors	Duration [days]	Start Date	End Date
5.1		2	18/09/22	19/09/22
5.2	5.1	5	20/09/22	26/09/22
5.3		3	21/10/22	25/10/22
5.4	5.3	5	26/10/22	01/11/22

Table 3.5: Data migration and deployment in production activities

The timeline for the data migration and deployment in production phase is provided below.

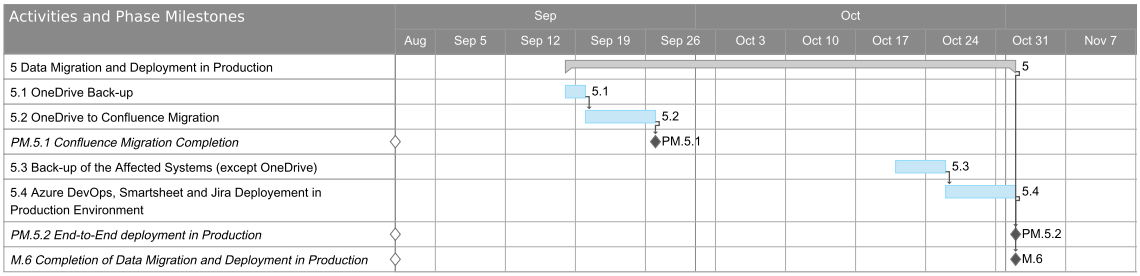


Figure 3.6: Data migration and deployment in production phase gantt chart

Atlassian Support

This phase includes two activities or tasks. The first one is related to the support provided by Atlassian during the migration phase; it has been established that two

Atlassian consultants will work side by side with Organization personnel in order to successfully deploy in production and migrate the interested information and data [6.1]. The second one is related to the support that Atlassian will provide after the implementation of the new tools; the software provider is bounded to a contract which guarantees to the Organization a continuous support for 15 business days (120 hours). A portion of this time (approximately 40 hours), will be spent supporting the Organization during the data migration and deployment in production. The remaining part will be spent whenever a issue occurs to the software provided [6.2].

Predecessors, duration estimate, start and end date estimate are provided below, for each task. Predecessors belonging to a different project phase will be discussed at the end of this section

Predecessors, duration estimate, start and end date estimate are provided below, for each task. Predecessors belonging to a different project phase will be discussed at the end of this section.

Task	Predecessors	Duration [days]	Start Date	End Date
6.1		5	26/10/22	01/11/22
6.2	6.1	27	02/11/22	08/12/22

Table 3.6: Atlassian support activities

The timeline for the Atlassian support phase is provided below.

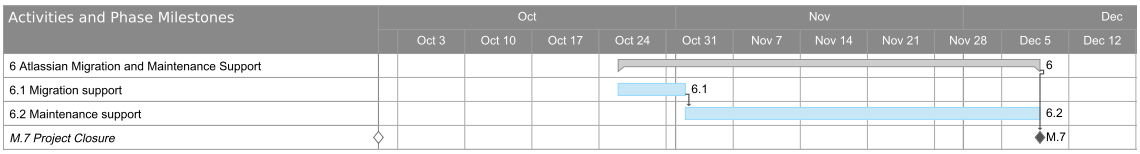


Figure 3.7: Atlassian support phase gantt chart

Freezing Period

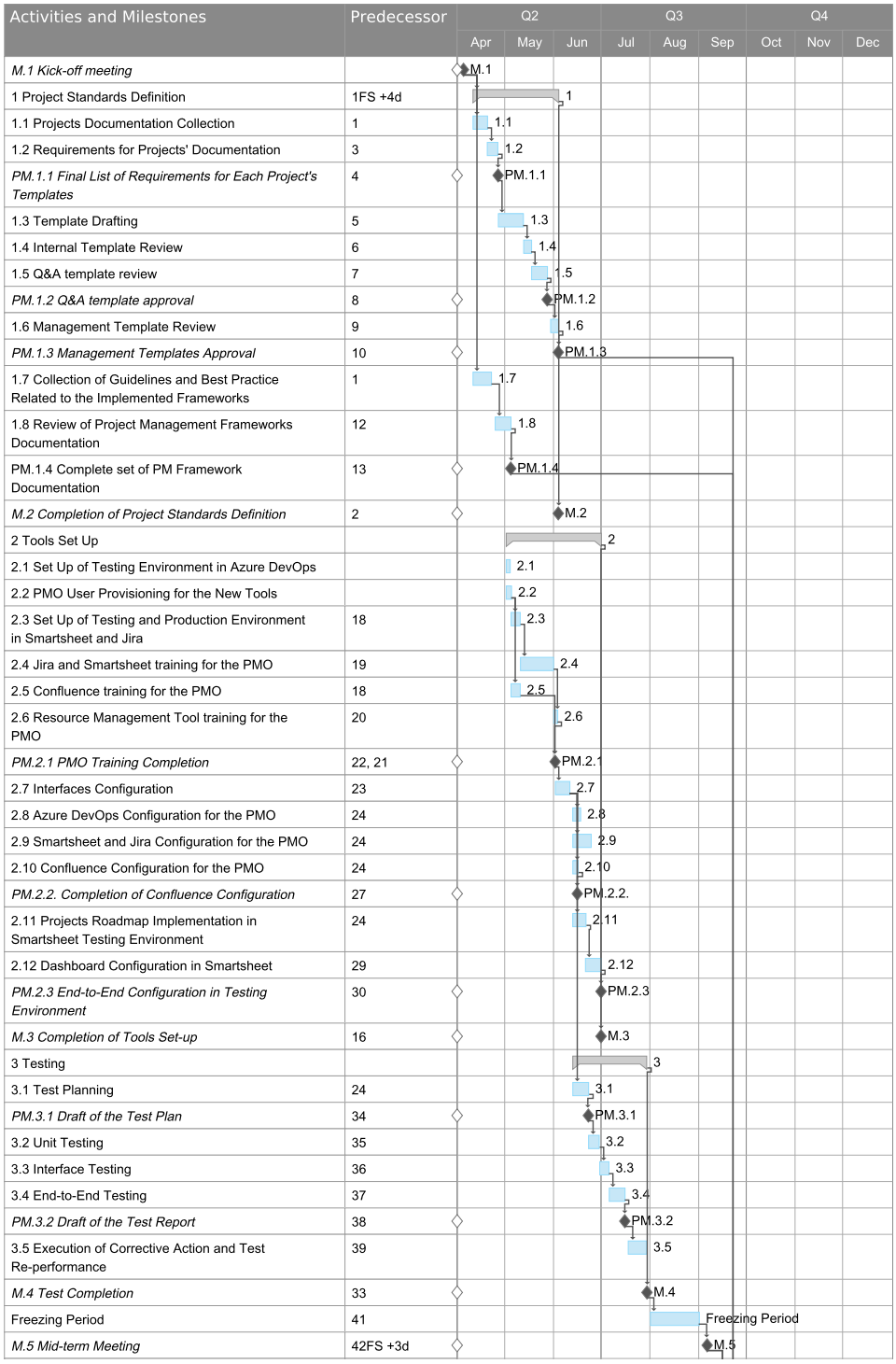
In the project roadmap a one month long freezing period is planned. It is important to state that the period was not planned in the original roadmap of the transition; as

a matter of fact, it was not a choice of the PMO, but a necessity due to the summer vacations. On top of this, two main considerations have been formulated in relation to this period: on the one hand, it increases the risk of loosing the momentum with a negative effect on the transition process. On the other hand, it allows PMO to have some time in order to reflect over the project results. Furthermore, people are typically motivated and willing to embrace change after the summer vacations.

Complete Project Scheduling

Each phase has been discussed individually. A comprehensive overview over the scheduling of every activity, including the relationship among activities belonging to different phases is provided below.

	Activities and Milestones	Predecessor
1	*M.1 Kick-off meeting*	
2	1 Project Standards Definition	1FS +4d
3	1.1 Projects Documentation Collection	1
4	1.2 Requirements for Projects' Documentation	3
5	*PM.1.1 Final List of Requirements for Each Project's Templates*	4
6	1.3 Template Drafting	5
7	1.4 Internal Template Review	6
8	1.5 Q&A template review	7
9	*PM.1.2 Q&A template approval*	8
10	1.6 Management Template Review	9
11	*PM.1.3 Management Templates Approval*	10
12	1.7 Collection of Guidelines and Best Practice Related to the Implemented Frameworks	1
13	1.8 Review of Project Management Frameworks Documentation	12
14	PM.1.4 Complete set of PM Framework Documentation	13
15	*M.2 Completion of Project Standards Definition*	2
16	2 Tools Set Up	
17	2.1 Set Up of Testing Environment in Azure DevOps	
18	2.2 PMO User Provisioning for the New Tools	
19	2.3 Set Up of Testing and Production Environment in Smartsheet and Jira	18
20	2.4 Jira and Smartsheet training for the PMO	19
21	2.5 Confluence training for the PMO	18
22	2.6 Resource Management Tool training for the PMO	20
23	*PM.2.1 PMO Training Completion*	22, 21
24	2.7 Interfaces Configuration	23
25	2.8 Azure DevOps Configuration for the PMO	24
26	2.9 Smartsheet and Jira Configuration for the PMO	24
27	2.10 Confluence Configuration for the PMO	24
28	*PM.2.2. Completion of Confluence Configuration*	27
29	2.11 Projects Roadmap Implementation in Smartsheet Testing Environment	24
30	2.12 Dashboard Configuration in Smartsheet	29
31	*PM.2.3 End-to-End Configuration in Testing Environment*	30
32	*M.3 Completion of Tools Set-up*	16
33	3 Testing	
34	3.1 Test Planning	24
35	*PM.3.1 Draft of the Test Plan*	34
36	3.2 Unit Testing	35
37	3.3 Interface Testing	36
38	3.4 End-to-End Testing	37
39	*PM.3.2 Draft of the Test Report*	38
40	3.5 Execution of Corrective Action and Test Re-performance	39
41	*M.4 Test Completion*	33
42	Freezing Period	41
43	*M.5 Mid-term Meeting*	42FS +3d



	Activities and Milestones	Predecessor	Q2			Q3			Q4		
			Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
44	4 Training Sessions	43FS +5d									
45	4.1 Online Smartsheet and Jira Training for Project Managers	43FS +5d									
46	4.2 Confluence Training for EMVO personnel	55									
47	*PM.4.1 Confluence Training Completion*	46									
48	4.3 Atlassian Training sessions for Project Managers and PMO on Smartsheet and Jira	45									
49	*PM.4.2 Smartsheet and Jira Training Completion*	48									
50	4.4 Online Resource Management Tool Training for Project Managers, Q&A personnel and IT Architects	45									
51	4.5 Atlassian Training sessions on Resource Management Tool	48, 50									
52	*PM.4.3 Resource Management Tool Training Completion*	51									
53	5 Data Migration and Deployment in Production										
54	5.1 OneDrive Back-up										
55	5.2 OneDrive to Confluence Migration	11, 14, 54									
56	*PM.5.1 Confluence Migration Completion*	55									
57	5.3 Back-up of the Affected Systems (except OneDrive)	51									
58	5.4 Azure DevOps, Smartsheet and Jira Deployement in Production Environment	57									
59	*PM.5.2 End-to-End deployment in Production*	58									
60	*M.6 Completion of Data Migration and Deployment in Production*	53									
61	6 Atlassian Migration and Maintenance Support										
62	6.1 Migration support	58SS									
63	6.2 Maintenance support	62									
64	*M.7 Project Closure*	61									

Figure 3.8: Complete project scheduling

3.3.2 Project Plan for Phases Related to ADKAR Model

The Prosci methodology's approach is holistic, considering both activities related to technical activities and individual change. In this section, the latter will be discussed. However, reducing the individual change to a list of tasks to be performed in a pre-determined order would not allow enough flexibility, necessary to successfully drive the transition. To this end, two main considerations have been formulated:

- Planning and implementing the ADKAR Model includes not only the scheduling and execution of a list tasks, but also the conceiving of an approach, or mindset, that the change enablers should adopt throughout the transition in

order to successfully promote the change.

- When dealing with this kind change, it is difficult to foresee the reaction of the individual; for this reason a predictive approach would result inefficient.

Given the considerations made above, rather than a fully upfront scheduling, the Agile Methodology principles have been adopted. A backlog, containing a first set of activities and good habits designed to encourage the individual change, is draft. It is important to state that writing the backlog is not a one-off activity; as a matter of fact, it should be constantly updated, adding new tasks or deleting some of them if necessary. PMO is responsible for the backlog first draft and continuous maintenance until the end of the transition. At the same time, a certain degree of openness is envisaged in order to gather suggestions from project managers and Organization's personnel. To this end, every fortnight a meeting with project managers is planned to collect feedback and evaluate the responsiveness towards the activities executed in the previous weeks. The scheduling of the activities involves exclusively PMO personnel; it takes place right after the fortnight meeting with projects managers and takes into account a time horizon of two weeks. Since project managers agendas are shared with the PMO, time slots for the activities are set up during the scheduling session.

Draft of the Backlog

The first version of the backlog is drafted by the PMO through a continuous process where the PMO personnel freely edit a specifically created page in Jira, that works a sort of basket, and populate it with possible activities. Afterwards, the PMO reunited analyses the list obtained in order to select the backlog activities. To do so, each team member rates the estimated impact of the activity with respect to the five ADKAR phases; then, the average for each phase and activity and activity is computed. To ease the process the obtained numbers are rounded to the nearest whole number. Given the results, the following rule of thumb is applied:

- If an activity has a score of 4 in at least one of the ADKAR phases it is inserted in the backlog.
- If the highest score for an activity, considering every ADKAR phases, is 2, the activity is discarded.
- If the activity scores 3 at least in 3 ADKAR phases, its inclusion in the backlog will be discussed among PMO personnel.
- In the remaining cases, the activity will be discarded.

The outcome of the process is not a one-off list of activities. It should be mainly seen as a bucket where change enablers could grab and schedule an activity. The same item could be repeated multiple time within the same ADKAR phase or among different phases. The selected items are presented below:

Activity	Awareness	Desire	Knowledge	Ability	Reinforcement
Tool's Demo	1	4	4	2	1
One to one meeting with project managers	5	5	3	2	4
FAQ Document Draft	2	4	1	1	4
Agile delivery of developed solutions	1	4	3	1	1
Short story on processes' weaknesses	5	3	1	1	3
Shared learning	1	1	4	5	2
Celebrations meetings	2	3	1	1	5

Table 3.7: Evaluation of the impact of activities selected to enhance the individual change

1. Tool's Demo - Recording of demo showing the capabilities of the tools with a specific focus on the functionalities interesting the work of the actors involved in the transition. For example, demo on the usage the Resource Management Tool could be recorded in order to provide Quality Assurance experts with evidence

of the future functioning of the process, preparing them for the transition. Furthermore, demos could be intended as tailored short video tutorial.

2. Face to face meetings - Those kind of meetings are intended to solve specific blocking points. The are mainly conceived for topics related to the raise of awareness and desire and to reinforce the end state; however, technical issues could be discussed as well.

3. Draft of FAQ - An FAQ document could be useful in order to remind to the involved actors (project managers, IT architects, QA experts) why is the Organization changing the way things are done. Subsequently, it reminds the reasons why the transition has taken place. It is crucial to address the question "What is in it for me?" for each actor.

4. Agile Delivery of the Solutions - Solution implemented by the PMO should be swiftly available to employees (if the transition has reached the proper ADKAR phase). For instance, when templates are ready, project managers can begin to use them, even if they are no uploaded in Confluence yet.

5. Case story on the weaknesses of existing processes - Short story, based on the real work-life cases could be written to raise awareness among the employees of the necessity to change the way things are done. They could be useful to reinforce the end state of the transition as well.

6. Share Learning Activities - Sessions where project managers work together using the new tools on a case study specifically designed. This activity could enhance the knowledge sharing among them.

7. Celebration meetings - In order to celebrate the success and make the point in relation to the state of the transition, specific meetings could be planned.

3.3.3 Integrated Project Plan

During the planning phase, the change enablers realized that activities related to the technical standpoint (or activities and meetings planned upfront) could have a significant impact on the individual change as well; in order to take it into account, their potential effect over the five ADKAR phases have been evaluated. In this way, the risk of under or over estimating the impact of an activity exclusively designed to enhance the individual change is mitigated. On top of this, it has been already said that, even if the transition clearly presents two levels (technical activities and individual change layer) they should not be considered as isolated entities; from the perspective of the Organization's personnel only one transition exists and change enablers should be aligned to this perspective. The evaluation made for the impact of the technical activities with respect to the ADKAR phases is summarised in the table below.

	Activity or Milestone	Awareness	Desire	Knowledge	Ability	Reinforcement
M.1	Kick-off Meeting	5	4	1	1	1
1.2	Requirements for Project's Documentation	4	3	1	1	1
1.4	Internal Template Review	3	4	1	1	1
PM.1.4	Complete Set of PM Framework Documentation	3	4	1	1	1
4.1	Online Smartsheet and Jira Training for Project Managers	2	3	5	4	1
4.2	Confluence Training for the Organization Personnel	2	3	5	4	1
4.3	Atlassian Training Sessions for Project Managers and PMO on Smartsheet and Jira	1	3	5	5	1
4.4	Online Resource Management Tool Training for Project Managers, QA personnel and IT Architects	1	3	5	4	1
4.5	Atlassian Training sessions on Resource Management Tool	1	3	5	5	1
6.1	Migration support	1	1	2	4	4
6.2	Maintenance support	1	1	3	4	5

Table 3.8: Evaluation of the impact of technical activities on the individual change

Chapter 4

Implementation, Monitoring and Conclusion

So far, the activities and analysis performed before the project kick-off have been discussed. In this chapter, the focus will be on the events ranging from the beginning of the project until the end of July. According to the two perspectives previously introduced, the monitoring of the technical activities will be briefly presented, while a more extensive discussion will be made on the activities related to the individual change and ADKAR Model implementation. The results related to the individual change monitoring, collected through surveys with the project managers, will be presented and analysed. In the end, the overall status of the transition at the end of July will be discussed and the suggested future steps will be presented.

4.1 Implementation and Monitoring

In this section, the implementation and monitoring of the technical and ADKAR activities will be object of discussion. The section will present the two standpoints separately, however, is crucial to underline that, if necessary, the integration between the perspectives will be discussed.

4.1.1 Monitoring of the Technical Activities

The monitoring of the activities related to period of time between the project kick-off and the end of July was performed directly in Smartsheet. Given the low degree of complexity of the tasks related to the analysed phases the monitoring is performed simply inserting the actual completion time and evaluating the deviations from the project baseline. From an high level perspective, the technical activities have been completed a week ahead of schedule. The budgeted and actual completion time are provided hereafter.

Monitoring of Project Standards Definition Phase

The actual and estimated start and end date for the activities associated to the Project Standards Definition Phase are shown in the table below.

Task	Actual Start date	Actual End date	Baseline Start	Baseline Finish	Variance [days]
1.1	11/04/22	18/04/22	11/04/22	19/04/22	1
1.2	19/04/22	21/04/22	20/04/22	26/04/22	3
1.3	22/04/22	11/05/22	27/04/22	12/05/22	1
1.4	12/05/22	16/05/22	13/05/22	17/05/22	1
1.5	17/05/11	31/05/22	18/05/22	27/05/22	-2
1.6	01/06/22	07/06/22	30/05/22	03/06/22	-2
1.7	11/04/22	26/04/22	11/04/22	22/04/22	-2
1.8	27/04/22	06/05/22	25/04/22	04/05/22	-2

Table 4.1: Monitoring of projects standards definition phase

The overall variance associated to the monitored phase is equal to -2 days. It means that, with respect to the project baseline, the project phase is completed 2 days behind schedule. The lateness is mainly due to the delays related to the draft of the templates and the review, performed by the QA department. It has been evaluated that the impact of the delay does not significantly impact the PMO implementation.

Monitoring of the Tools Set Up Phase

The actual and estimated start and end date for the activities associated to the Tools Set Up Phase are shown in the table below.

Task	Actual Start date	Actual End date	Baseline Start	Baseline Finish	Variance [days]
2.1	02/05/22	02/05/22	02/05/22	03/05/22	1
2.2	02/05/22	03/05/22	02/05/22	04/05/22	1
2.3	04/05/22	06/05/22	05/05/22	10/05/22	2
2.4	09/05/22	31/05/22	11/05/22	31/05/22	0
2.5	04/05/22	09/05/22	05/05/22	10/05/22	1
2.6	01/06/22	01/06/22	01/06/22	01/06/22	0
2.7	02/06/22	13/06/22	02/06/22	10/06/22	-1
2.8	14/06/22	17/06/22	13/06/22	17/06/22	0
2.9	14/06/22	30/06/22	13/06/22	24/06/22	-4
2.10	14/06/22	16/06/22	13/06/22	15/06/22	-1
2.11	14/06/22	23/06/22	13/06/22	20/06/22	-3
2.12	24/06/22	07/07/22	21/06/22	30/06/22	-5

Table 4.2: Monitoring of tools set up phase

The overall variance associated to the monitored phase is equal to -5 days. It means that, with respect to the project baseline, the project phase is completed 5 days behind schedule. The lateness is mainly due to the delays related to the interfaces configuration, the roadmaps implementation in Smartsheet and the dashboard configuration. In particular, the configuration of the dashboard has to be addressed through mitigating actions, in order to avoid the over-propagation of the lateness in the subsequent phase. In fact, the set up of the dashboard is necessary in order to properly test them. To this end, an activity specifically designed to test the dashboard functioning has been scheduled. More details will be provided in the discussion on the monitoring of the testing phase. The dashboard testing has been scheduled in order to start as soon as the dashboards are configured (Finish-to-Start relationship).

Monitoring of the Testing Phase

As mentioned before, in order to specifically address the delay related to the dashboard configuration the dashboard testing has been separated from the other testing activities. This was possible thanks to the fact that the dashboards represent one end of the system, they are only interfaced with Smartsheet and, most of all, the they do not provide any input to the system. To sum up, the tests on the dashboard could impact only Smartsheet without affecting the result of the other tests. The actual and estimated start and end date for the activities associated to the Testing Phase are shown in the table below.

Task	Actual Start date	Actual End date	Baseline Start	Baseline Finish	Variance [days]
3.1	14/06/22	21/06/22	13/06/22	22/06/22	1
3.2	22/06/22	28/06/22	23/06/22	29/06/22	1
3.3	29/06/22	04/07/22	30/06/22	05/07/22	1
Dashboard Testing	08/07/22	12/07/22	-	-	-
3.4	13/07/22	22/07/22	06/07/22	15/07/22	-5
3.5	25/07/22	05/08/22	18/07/22	29/07/22	-5

Table 4.3: Monitoring of testing phase

The overall variance associated to the monitored phase is equal to -5 days. It means that, with respect to the project baseline, the project phase is completed 5 days behind schedule. The delay accumulated during tools set up phase remained constant. Even though the end of the testing activities overlapped with the freezing period the team managed to successfully complete the phase.

4.1.2 Implementation and Monitoring of the ADKAR Activities

The implementation of the Change Management Model takes place in an iterative way. The final goal is to get to a scenario where project managers have:

- understood the reasons why the change is necessary and how the proposed solutions will help them in their job;
- acquired the necessary information and skills necessary to work in the newly designed scenario;
- a deep understanding of the long term beneficial effects of the PMO implementation.

To monitor their responsiveness throughout the PMO implementation the ADKAR profile is created for each project manager. The profile consists of a graph bar where each bar corresponds to one of the element of the ADKAR Model. Each of them is rated on a scale ranging from 1 to 5; following the order discussed in the first chapter the focus of the ADKAR activities can move from one stage to the next one when the grade assigned is greater than 3. If the grade is lower or equal to 3 the phase is a barrier point for the interested person and must be properly addressed.

First Iteration

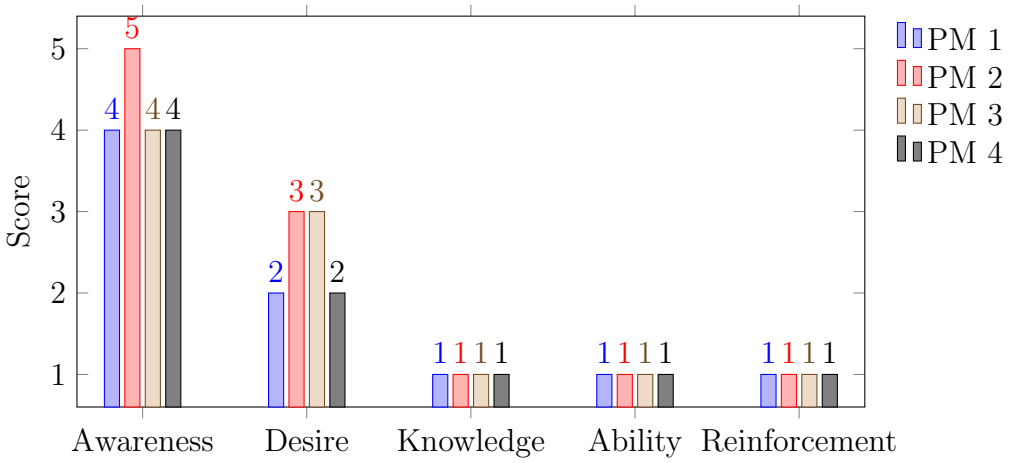


Figure 4.1: ADKAR profile after the first iteration

The objective of the first iteration is to raise awareness among the project managers in relation to the existing criticalities and the way the PMO implementation

is meant to address them. For the sake of this analysis it must be said that project managers were aware of the issues related to the as-is scenario before the official beginning of the transition. That is why, except the Kick-off meeting and a face-to-face meeting with each project manager, no other activities were planned and carried out.

Second Iteration

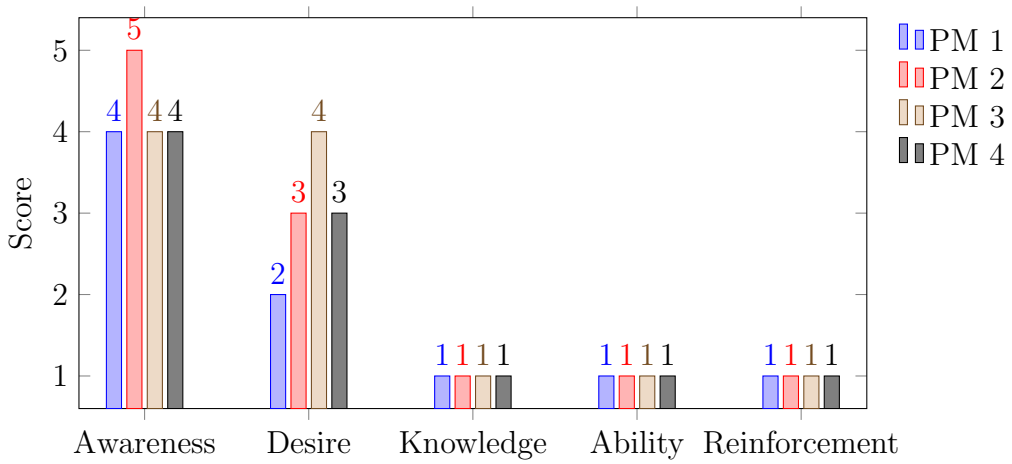


Figure 4.2: ADKAR profile after the second iteration

Given the results obtained related to the first phase of the ADKAR Model, during the second iteration the effort is mainly put on activities designed in order to enhance the desire to change. At the same time, the level of awareness obtained in the previous iteration must be reinforced, given the constant risk of moving backwards. To this end, the following activities are scheduled for the second iteration:

- Weekly one-to-one meeting with the project mangers explain to them the advantages related to the implementation of the PMO.
- Draft of FAQ containing the answers to the questions frequently asked by the project managers or the personnel of the Organization.

The second iteration did not lead to great improvements with respect to the

ADKAR profiles; this could be related to the lack of material evidences related to the reasons why the project managers should have the desire of change. Recalling the scheduling of the technical activities, the end of the draft of the templates (which consists of the first deliverable of the PMO) was planned for the second week of May while the end of the second iteration falls in the last week of April.

Third Iteration

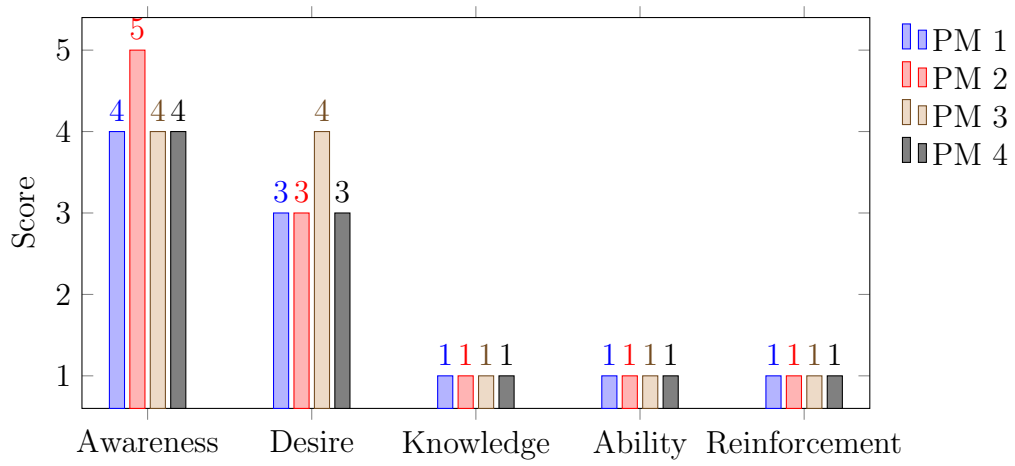


Figure 4.3: ADKAR profile after the third iteration

For the same reasons related to the previous iteration, level of the desire of change has not significantly increased.

The third iteration shares the focus of the previous one. It should be mentioned that the FAQ document has been made available to the personnel of the Organization. In addition, the weekly meetings scheduled in the previous iteration have been re-proposed and extended to the IT architects and the Quality Assurance experts of the Organization, in order to introduce them to the new procedures.

Fourth Iteration

In the fourth iteration the templates were made available to the project managers and the weekly meeting have re-proposed (exclusively for project managers).

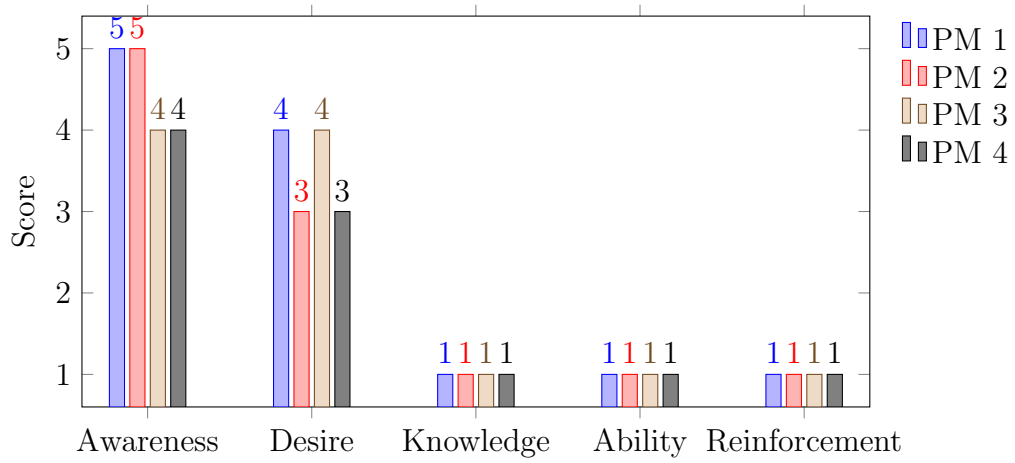


Figure 4.4: ADKAR profile after the fourth iteration

Fifth Iteration

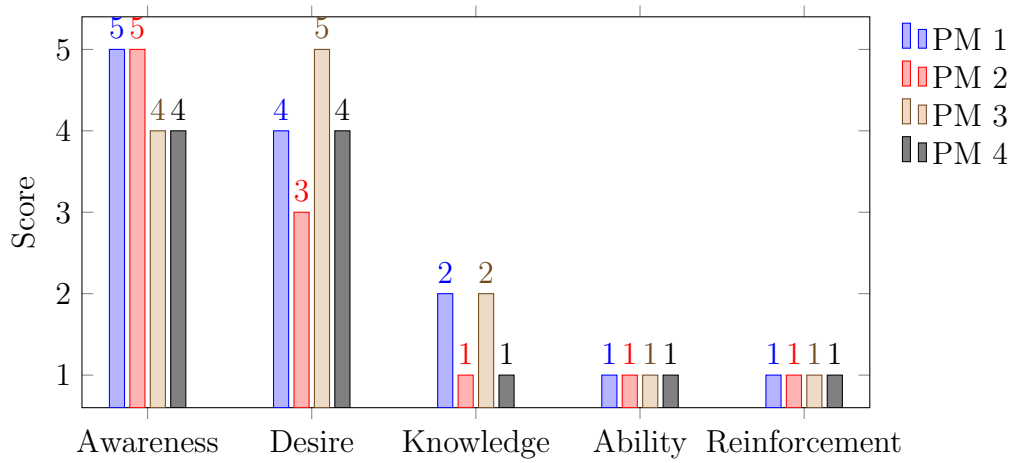


Figure 4.5: ADKAR profile after the fifth iteration

In the fifth iteration, demos on the implemented tools and software are shown to the affected personnel.

It is interesting to observe that the demos related to the tools and software have enhanced the increase of the level of knowledge for two project managers.

Sixth Iteration

During the sixth iteration one-to-one weekly meeting are planned with project managers in order to specifically address the blocking point for the second stage of the Model (with reference to PM 2) and to prepare them for the knowledge phase (with reference to PM 1, 3 and 4).

With the end of the sixth iteration it has been recorded that each project manager managed to overcome the second step of the model.

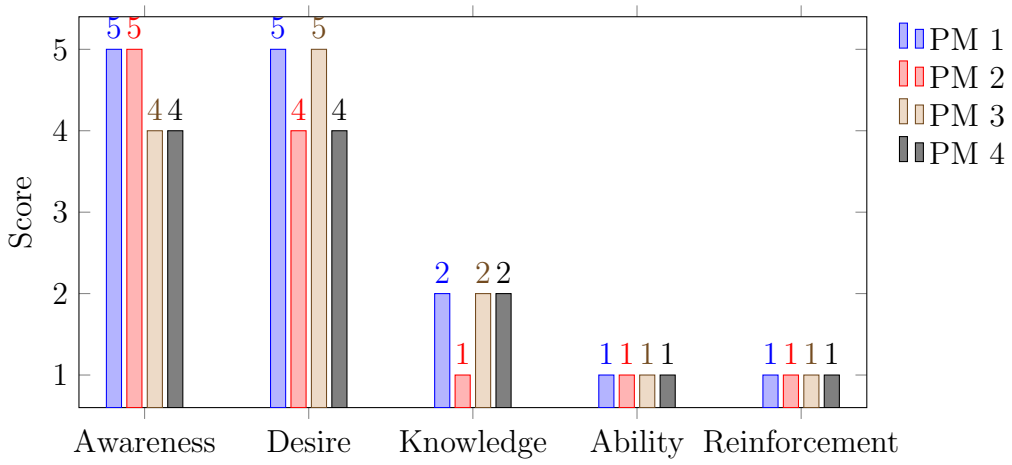


Figure 4.6: ADKAR profile after the sixth iteration

Seventh Iteration

During the seventh iteration, project managers are provided with the access to the tools and software in order to familiarise with them. At the same time a meeting with project managers and PMO is organized in order to share first impressions on the usage of the new tools and software.

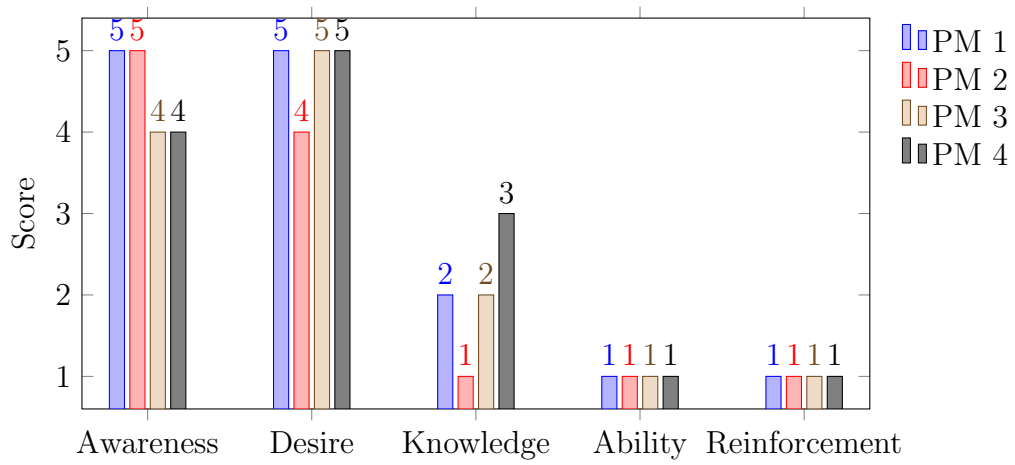


Figure 4.7: ADKAR profile after the seventh iteration

4.2 Conclusion

During time ranging from the end of the seventh transition to the end of July (approximately two weeks) no activities related to the individual change have been scheduled. The effort during this period of time was on the execution of the technical activities and the analysis of the results obtained until that time.

4.2.1 Overall Status of the Transition

From an overall point of view, the feedback on the transition collected both from project managers and personnel of the Organisation are positive. The activities scheduled in order to promote the individual change managed to significantly raise the level of awareness and desire among the project managers. In fact, at the end of the sixth iteration, the score reported by the interested personnel was above the threshold (3) for both the phases of the model. The results collected for the third phase (knowledge) are encouraging, given the trend. However, none managed to overcome the barrier before the end of the summer break. No improvements have been recorded if looking at the last two phases of the ADKAR model, given the lack of scheduled activities related to the increase of the level of ability and

reinforcement. From the perspective of the technical activities the challenges faced during the implementation of the new tools have been addressed thanks to the wide availability of material online, provided both by the communities of users and the provider (Atlassian).

4.2.2 Future Steps Forward

After the summer break, the PMO is called to carefully schedule the activities. It will probably be one of the most crucial phases of the transition, considering the risks of loosing the momentum and taking step backwards. Afterwards, the implementation of the PMO can continue following the predefined plan, both from the perspective of the technical activities and individual change. Once the PMO is fully implemented, future steps forward could involve the enlargement of the area of activity of Project Management Office to the other departments of the Organisation. For instance, the new processes do not take into account the flows of information and documents between the Operations and the Finance department. In the future documents like work orders could be standardized and directly managed by the PMO. In the long term, the Program Management Office (PgMO) could represent a further step for Organization, helping the management to achieve the strategic objectives.

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