Creating and implementing a scalable IT project management methodology at a multinational company

Benedek Ács
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I. számú melléklet

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1. Abstract

Project management methodologies – like PRINCE2 – are widespread among institutions and companies. Creating a new methodology to meet the exact needs of a specific organization costs considerably more resource but it could worth it. After a thorough analysis a multinational company decided to create its own methodology. The new IT project management methodology incorporates parts from best practices and various well-known methodologies but it has unique parts, too. It is designed to meet the following important unique requirements among others: flexibility from various point-of-views and usability meaning that it should be usable in practice during the business-as-usual of the company not just in theory. Implementation of the new methodology is decided to be done through a step-by-step approach and within the context of a project. In the summary section some conclusions are deducted regarding the process, purpose and result of creating a new IT project management methodology.

2. Acknowledgement

I would like to express my sincere gratitude to my advisor dr. Katalin Ternai for the continuous support of my study and related research, for her patience, motivation, and immense knowledge. Her guidance helped me in all the time of research and writing of this thesis.

My sincere thanks also goes to Gaspar Domonkos, who provided me an opportunity to join his team as an intern and gave me constant guidance through my traineeship. I could not have imagined having a better advisor and mentor.

3. Confidentiality information

Without the written confirmation of Autoneum Management AG’s IT Program Management Office and the author, nobody is allowed to use, redistribute or share this thesis or any part of it.
4. Introduction

4.1. My connection to the topic

I have chosen this topic for I have done my internship at Autoneum Management AG where my main project was to help creating and implementing a new IT project methodology. In addition I have work experience gained at various companies as a project manager at smaller projects.

4.2. Thesis structure

The thesis is logically divided into four main parts:

- The first part explains why there is a need for project management methodologies and why would any company – or institution – consider implementing one. It also describes three widespread project management methodologies and gives an overview of them that highlights the common points in the methodologies. These points will be used to create the new, tailored methodology.

- The second section explains the creation of the new methodology and the unique need, which forced the creation and implementation itself. It also describes the parts of it in detail.

- The third part portrays the implementation of the new methodology in the specific company.

- The fourth part contains the summary of the thesis with a lessons learned section for institutions considering implementing a customized project management methodology.
5. Overview of project management methodologies

In the following section after expounding why does a company need a project management methodology, three project management methodologies will be explained. The first two – PMI and PRINCE2 – are general methodologies meaning that they are not specialized for any certain industry or company function. By contrast Sure Step methodology was created by Microsoft in order to help companies implementing ERP systems.

5.1. Why does a company need a project management methodology?

Companies exist for solely one purpose: to generate profit. Profit can be generated in various ways like manufacturing or selling demanded goods. A project management methodology if implemented, rarely improves or generates profit directly so the question is given: why does a company need a project management methodology?

5.1.1. Benefits

According to Jack R. Meredith: “… teams are used for making decisions and taking actions. This calls for a high level of coordination between groups of people not particularly used to such interaction.” (Meredith & Mantel, 2011).

It means that for most companies – especially multinational ones – it is a must, not an optional framework. It is a way of work that enables companies to stay flexible and efficient. While agreeing with it, I would like to amend the citation above with the following reasons and goals to be achieved that forces the need for a methodology:

- A common understanding: it could look rather a self-evident thing for small teams with similar members, but for companies employing colleagues from across the globe it is not. Cultural differences and differences in people’s attitude to work can cause significant problems and drawbacks. With a project that meets the requirements of a specific methodology, there are always key indicators that helps creating a common understanding of the current situation for all team members.

- Structure: Different teams could use various structures for their projects. It could lead to miscommunication to other teams and to business decision makers, too. Bad decisions based on wrong information is certainly a thing to avoid. Thus projects needs to be handled the same way by all of the project teams and company groups. A methodology
gives a specific structure to each project, ensuring transparency and ease of comprehension of the project.

- More ways of control: A project like everything else in a company needs to be controlled. A standardized project meeting the requirements of a clear methodology gives numerous ways to oversee and control it.

- Improved responsibility management: each methodology has clear responsibility roles based on the RACI matrix. It means that each task – or process – a set of roles are assigned. The most common roles are: responsible, accountable, consulted and informed.

- Efficiency in setting up, running and exception handling of projects: a renowned methodology helps managing a project through its lifecycle. It means reduced administration and problem solving times in case of an unexpected – or excepted – issue.

- Quality assurance and compliance: using a recognized project management methodology as a way of handling projects has its benefit of enabling the specific company to undergo audits in order to acquire a standard, for example an ISO standard. Becoming ISO standardized has many advantages for a company like increased stock prices.

These are tangible benefits, which can be achieved by implementing a project management methodology.

5.1.2. **Major considerations**

Besides of the benefits there are major considerations that every company planning on implementing a project management methodology should examine:

- Cost: the implementation of a methodology can mean a significant expense for a company both in terms of man-days and money. Therefore a comprehensive cost-benefit analysis is strongly advised for every company or institution.

- The variety of disciplines: there are a lot of PM disciplines to choose from. There are general methodologies, industry-specifics and even ones for corporate functions. Thus it is highly important for companies to research methodologies and choose the most suitable for them.

- Organizational change: implementing a methodology means change and change is something that colleagues and some cases even the management doesn’t want to happen because it means uncertainty. The organizational resistance and the organizational gravity
should be analyzed in detail before any implementation plan.

- OCM project: a methodology implementation should always be considered as an organizational change management project. Thus it is important that in case of big companies – or companies with strong resistance against any change – the methodology should be implemented in small steps (this topic and the way of implementation will be described in the seventh chapter).

5.1.3. **IT governance and project management methodologies**

It is important to see where and how does a PM methodology fit into an IT governance landscape of a company. It is common that the project management is after the logical order of incident and change management, as it is in case of the specific company and shown in the first figure:

![Figure 1](Source: Autoneum Management AG internal document)

In summary, institutions across sectors and geographic borders have been steadily embracing project management as a way to control spending and improve project results. According to the Project Management Institute when the recession began, this practice became even more important (Project Management Institute Inc., 2010).
5.2. PMBOK by PMI

PMI is an abbreviation of Project Management Institute, which is a not-for-profit organization founded in 1969 in order to create a standard project management methodology for the British Government. By now, it became one of the most widespread project management framework used by various industries, for-profit, not-for-profit and governmental institutions. The methodology itself is described in the Project Management Body of Knowledge (PMBOK) and it is based on a process-oriented point of view. The PMBOK is composed of three main sections:

5.2.1. First section

The first section defines what a project and project management is and describes the relation of projects to other entities like program and portfolio management. It also defines the role of the project manager and gives an overview of the project life cycle, project phases and stakeholders.

According to PMBOK: “A project is a temporary endeavor undertaken to create a unique product, service or result. The temporary nature of projects indicates a definitive beginning and end. The end is reached when the project’s objectives have been achieved or when the project is terminated because its objectives will not or cannot be met …” (Project Management Institute Inc., 2008). Moreover it states that project management is a set of skills, tools, techniques and processes used to ensure the project’s success. Project management doesn’t have exact borders but we can say that in most cases it includes the following processes:

- Identifying requirements
- Balancing the competing projects constraints in order to grant that the project’s products would meet the declared requirements. These constraints generally include the followings:
  - Scope
  - Quality
  - Schedule
  - Budget
  - Risk (Project Management Institute Inc., 2008)

5.2.2. Second section

The second section describes the management processes that help handling a certain project. These processes are organized by knowledge areas into four main groups: the planning, executing, monitoring and closing process groups.

It is important to mention that this section highlights and describes the need for project phases, as entities where a major deliverable should be completed making phases a logical place where extra control is needed. Regardless of the project complexity or size, all projects share the same life cycle structure:
1. Starting a project
2. Organizing and preparing
3. Carrying out the project work (in order to complete the project’s goal)
4. Closing the project

It is important to mention that starting and closing a project should always be a formal procedure in order to prevent all potential miscommunication or authentication issue (Project Management Institute Inc., 2008).

5.2.3. Third section

The third section describes the effective project management processes for a project. They form the backbone of the methodology and they are organized into five Process Groups. These groups are with their most important processes are as follows:

1. Initiating:
   - Develop project charter: creating a document which formally authorizes the project. It includes the fundamental requirements of the project’s stakeholders, too.

2. Planning
   - Develop project management plan: describing how the project will be handled and coordinated
   - Define scope: detailed description of the project and product
   - Create WBS: developing a work breakdown structure, a document that describes the deliverables of each phase with their respective requirements and the affected roles with responsibilities
   - Estimate activity resources: assess the activities and evaluate how much and what kind of resources are needed to successfully finish them
   - Plan quality: create a detailed plan of the requirements against the project’s product(s)
   - Plan communication: determine the most appropriate communication approach and find relevant communication partners – stakeholders
   - Assess risks: evaluate risks with quantitative and qualitative analysis’

3. Executing
   - Direct and manage project execution: control and lead the project in order to perform the work defined in the project’s WBS
   - Quality assurance: this is continuous process which ensures that the project’s deliverables meet the already declared requirements
   - Project team: acquire, develop and manage the project team
   - Manage stakeholder expectations: communication with and issue addressing of stakeholders
   - Conduct procurement: this process conducts the procurement of needed goods or services from third party suppliers. It includes the gathering of seller responses,
setting up a selection criteria and selecting a winning contact

4. Monitoring and controlling
   - Monitor and control project work: this is the backbone process of this process group, which includes the task of tracking, regulating and reviewing the working progress. It may include status reporting, different kinds of measurements and forecasting, too.
   - Perform integrated change control: it is a frequently underestimated process, which includes reviewing all change requests and approving changes. It is important to mention that this does include the change of the project plan and documents, too.
   - Control resources: monitoring the status of project plan, budget (cost).
   - Report performance: this is the process of gathering performance information, creating reports based on these information and communicating them to involved stakeholders

5. Closing
   - Close project or phase: this is the process of “…finalizing all activities across all of the management Process Groups to formally complete the project or phase.” (Project Management Institute Inc., 2008)
   - Close procurements: this process includes the completion and closing of all running procurements (Project Management Institute Inc., 2008).

5.2.4. Benefits

Using PMBOK has various benefits: it is a framework and de facto standard so it can be used as a common ground by separate stakeholders. It also clarifies the certain knowledge that is needed to manage the life cycle of any project, program and portfolio. It is done through their processes with their respective inputs, tools, techniques and deliverables.

5.2.5. Disadvantages

Beside the benefits of using this methodology, it has also a couple of disadvantages. Even the creators of this methodology admits that the most common issue with PMBOK is its complexity (Project Management Institute Inc., 2008). It can easily happen to become too complex for small projects. Also the company that wants to use it has to adapt it to the area or industry of application, project size and scope; and also it has to revise time, budget and quality constraints. “For any given project, the project manager, in collaboration with the project team, is always responsible for determining which processes are appropriate and the appropriate degree of rigor for each process.” (Project Management Institute Inc., 2008)
5.3. PRINCE2

The PRINCE2 is a project management methodology, which rights are currently owned by Axelos a company specialized in best practices in the IT industry. PRINCE2 is an acronym for Projects IN Controlled Environment, version 2.

5.3.1. History of PRINCE 2

According to the Office of Government Commerce, PRINCE2 derives from an earlier method called PROMPT II (Project Resource Organization Management Planning Techniques.) In 1989 the Central Computer and Telecommunications Agency (CCTA) adopted a version of PROMPT II as a UK Government standard for information systems (IT) project management. They gave it the name ‘PRINCE’, which originally stood for ‘PR(OMPT II ) IN( the ) C(CTA ) E(nvironment). PRINCE was renamed in a Civil service competition as an acronym described earlier. Soon it became regularly applied outside the purely IT environment, both in the government of the United Kingdom and in the private sector around the world. (Office of Government Commerce, 2009)

5.3.2. Structure of PRINCE 2

It has a lot in common with PMBOK: it is as a framework of best practices as a standard with certifications to obtain and exams to pass and most importantly it is also industry independent. It includes four integrated elements of principles, themes, processes and the project environment. It is particularly important that a project is called a PRINCE2 project only if it follows the seven principles described by PRINCE2.

The themes describe the main aspects of project management that must be addressed continuously and in parallel throughout the project. There are seven themes that describe how the seven principles can be followed while achieving the objectives of them.

The seven processes of PRINCE2 describe how a project should be managed effectively from the start till the project closure. PRINCE2 provides guidelines for the activities that are recommended for each of the seven processes. It also provides the responsibilities for various roles in the project organization structure (Turley, 2010).

5.3.3. Principles

Principles guarantees the universality of PRINCE2 methodology making them a must to follow. Principles are characterized as universal and self-validating. These principles are as follows:

1. Continued business justification: a project must have a justifiable starting reason, which has to be documented and approved. The justified reason can change but it should be valid throughout the project lifecycle.
2. Learning from experience: at the beginning of the project, previous lessons should be analyzed in order to see if the lessons could be applied. Lessons learned during the project should be included in the reports and reviews.

3. Defined roles and responsibilities: a project must have agreed and clearly defined roles and responsibilities. Projects must have stakeholders from each of the following entities: business, user and supplier. A business stakeholder should ensure that the business will get value for their invested money. A user stakeholder should ensure that the project’s product is usable – as designed – after the end of the project. A supplier stakeholder should provide the needed resources throughout the project’s lifecycle.

4. Manage by stages: it means that a project should be divided into stages based on the logical order of tasks and processes. Only one stage should be managed and worked on at the same time. At the end of a specific stage, the next one should be started – the last stage is an exception from this rule hence it means the end of the project.

5. Manage by exception: a project should detail its tolerance towards resources and requirements, such as quality. It helps saving senior management time with reducing time-consuming exceptional meetings.

6. Focus on products: a PRINCE2 project is always output-oriented, not activity-oriented. It means that the project’s product(s) and deliverables should be described and agreed before undertaking the activities needed to produce or develop them.

7. Tailor to suit the project environment: it is highly important to tailor the PRINCE2 methodology to the unique needs of the given project, like industry-specific models or corporate policies, standards (Hedeman & Seegers, 2009).

5.3.4. Themes

Themes describe the most relevant aspects of project management. These aspects must be addressed throughout the project. With other words, themes are knowledge areas giving knowledge on a specific area of project management (Turley, 2010). These themes are as follows:

1. **Business Case**: this theme defines how to create a business case which declares the reason of starting and doing the given project. This business chase should be updated at the end of each stage. The business case should contain the business reasons and the benefits for the organization, too.

2. **Organization**: the theme defines the roles and responsibilities of the project and names the stakeholders of it, like sponsors, users and suppliers. It is very important that the Project Manager’s role is clarified in this theme, too.
3. **Quality**: describes the quality level the product must pass at the end of the project. It also defines the way of use of the project’s product so it can be correctly used, as intended – the product can be fit for use.

4. **Plans**: this theme includes the project plan, the steps involved, budgeting and detailed requirements against deliverables of the project.

5. **Risks**: primarily this theme describes risks and how they can be identified, analyzed and assessed. It also includes how the risks can be monitored throughout the project. It helps making difference between two types of risks: threats and opportunities.

6. **Change**: this theme describes how the project can assess, act upon and manage change requests. Assessing these requests are especially important because they may have a direct impact on the project itself.

7. **Progress**: this theme describes how can the progress of the project be monitored and this progress be communicated to the relevant stakeholders. It includes the timing and the method of reporting, too (Hedeman & Seegers, 2009).

5.3.5. **Summary**

In summary PRINCE2 is an acknowledged methodology with strict rules for a project with all its benefits and drawbacks. Its benefits include:

- Easy integration into industry-specific models
- It ensures focus on the continuing viability – justification – of the project through its lifecycle

5.4. **Microsoft Dynamics Sure Step methodology**

Microsoft Dynamics Sure Step is completely different from the ones described before. It is a customized project methodology providing a complete framework for implementing Microsoft Dynamics CRM 4.0. This includes project management discipline and field-tested best practices, plus user-friendly tools that can help you deploy, migrate, configure, and upgrade of Microsoft Dynamics products (Microsoft Corporation, 2010).

In spite of its limitations it is a perfect example of project methodology customization thus it’s a good orientation point for tailoring methodologies to unique needs.

Figure 2 shows an overview of Sure Step and observing it is evident how Microsoft did customize this methodology – they customized the following parts:

- phases,
- processes,
- deliverables.
In conclusion customizing the three parts of a project methodology – mentioned above – can be a good starting point of customization (Microsoft Corporation, 2010).

5.5. Synthesis of methodologies

Although all of the methodologies described above are different they have some similarities. These similarities are the core parts of each project methodology therefore can be used to create a new methodology, which is customized to a company’s unique needs and requirements. In the followings these common parts will be described:

- Phases follow the logical order of the project, from initiation to closure
- Deliverables are mandatory and to-be-specified for each phase
- Milestones or gates are used to ensure project controlling
- There is a project organization with roles and responsibilities
- Communication has to be a part of the project

Project management in the modern sense began in the early 1950s driven by businesses that realized the benefits of organizing work around projects, and the critical need to communicate and co-ordinate work across departments and professions (Project Smart, 2014).

Leading organizations across sectors and geographic borders have been steadily embracing project management as a way to control spending and improve project results. When the recession began, this practice became even more important (Project Smart, 2014).
Project management has a definite beginning and end, and is not a continuous process. Project management uses various tools to measure progress and track project tasks. Projects need ad-hoc resources, as opposed to businesses that have dedicated full-time positions.

Project management methodologies consist of four to five process groups, and a control system. Regardless of the methodology or terminology used, project management uses the same basic processes:

1. Initiation
2. Planning and Design
3. Execution
4. Monitoring and Controlling
5. Closing

In the next section of my thesis – Creating a new methodology – these parts will be used as guidelines and mandatory elements, too.

Also, Sure Step gives a good example on customization thus the same parts will be used to ensure a custom tailored methodology.
6. Creating a new methodology

In the followings Autoneum will be presented as the object-lesson for a company that wants to implement a proper, working project management methodology.

6.1. Introducing Autoneum

The particular company that this thesis is related to in terms of creating a scalable IT project management methodology is Autoneum Management AG – Autoneum in the followings.

Its headquarters is in Winterthur, Switzerland with more than 200 Swiss employees. Overall, Autoneum employs more than 9,600 people and operates in 20 countries (Autoneum, 2015). Autoneum is a market leader in producing state of the art acoustic and thermal management materials for vehicles and small planes.

6.2. Needs and requirements for a project methodology

For convenience reasons in the followings I will call the newly created methodology APMM, acronym for Autoneum’s Project Management Methodology.

6.2.1. Constraint – Company and department profile

Although Autoneum has subsidiaries in all continents arranged into four business groups its IT department is centralized.

Each business group is organized by market region. Each of these groups is managed by the Head Business Group, who reports directly to the CEO of the Autoneum Group.

Subsidiary companies are founded on the basis of legal, business and financial considerations. Each company is managed by the head of the legal unit who is responsible for financial controlling and for compliance with national laws and regulations and internal guidelines.

Autoneum’s IT Department deals with an average of 50-70 projects per month and there are roughly the same amount in pipeline. Pipeline items are projects that the IT department considers necessary or needed from some party in the future but no yet have been officially requested or started.

Approximately 50% of the officially running projects are active ones.

6.2.2. Constraint – project types

The third figure shows the organizational chart of the IT department. It’s clear from it that there is at least three different point-of-views inside IT:

- Application focus (highlighted by aqua)
- Governance / business relationship management (highlighted by orange)
- Infrastructure focus (highlighted by olive green)
These three main categories means that the new project methodology has to be scalable not just by size but by different viewpoints, too. Furthermore this situation cannot be handled by creating different project types and a customized methodology for each category. For the reasons described in the previous section – “Company and department profile” – it is essential that only one, unified methodology would be created.

6.2.3. Key requirements

The constraints described above shows clearly the diverse requirements for the new project management methodology. In order to meet these requirements APMM has to be:
Scalable in terms of project size: the subsidiaries in all continents and central IT department means that APMM has to be highly scalable in terms of project size: it has to support both small projects at remote plants and corporate initiatives affecting the whole organization and it’s more than 9000 employees.

Scalable in terms of project types: APMM has to be global but it has to be also be used by different competence centers with different project characteristics and different point of views. A good example is that the SAP competence center has standard change requests with a completion time of 40 working days while the PLM competence center takes a twelve days change as a project.

Easily adoptable by different stakeholders due to the reasonable cultural and geographical differences. In other words every aspect of the methodology has to be unambiguous.

6.3. Justification for investing into development

Every institution has two options if it wants to use a project management methodology. Either it can implement a standard solution or it can sacrifice considerably more effort and create its own methodology. This question is very similar to the one of software implementation: should a company develop its own software or purchase a boxed solution?

The answer is different in each case because it depends on the company size, the sector it operates in and the unique goals of the implementation. In this situation it is recommended to create a cost-benefit analysis for the two options. Therefore a rough estimation was made of how much more would it cost the company to create its own methodology instead of implementing a standard. The result of the analysis showed that it would take 20 working days more creating a methodology than implementing one.

In this exact case, Autoneum decided to create its own methodology for the following two main reasons:

- The criteria described in the first section of my thesis couldn’t meet the scalability requirements neither in terms of project sizes nor of project types
- Twenty working days is acceptable for customization because the company would use this methodology in various scenarios and for a long period of time. There is a trust that it would pay off from the leadership team.
6.4. Creation of APMM

APMM is the result of a changing corporate strategy: it is only from 2011 an individual company. Before that it was a division of Rieter Holding’s. As a part of Autoneum’s separation and debut on the SIX Swiss Exchange it started a global centralization initiative.

In line with this initiative in 2011 the new CIO of the company started to organize the local IT teams into global IT Service Centers. The IT PMO has been founded in Winterthur at the Global Headquarters. Its primary job is to coordinate manage and control all IT projects.

The IT Leadership Team decided to use a CPI (Continuous Process Improvement) method instead of BPR (Business Process Reengineering). With other words Autoneum chose evolution instead of revolution. They founded their decision on two main pillars, described below (Autoneum Management AG, 2014).

- The strong organizational gravity of Autoneum Group: a major change be a huge disruptor and it could easily cripple the "business-as-usual" resulting in invaluable loss in terms of profit and company’s reputation.
- Autoneum’s Principles: it includes continuous development as a principle to follow and act accordingly.

As the next step of continuous improvement of project management across the Group, Autoneum decided to create its own project management methodology and implement it, first only in a buy-in system.

The creation and approval process of APMM were as follows:

- Realizing the need for a standard company-wide project management methodology
- Establishing responsible for methodology creation
- Allocating required resources
- Gathering requirements for the new project management methodology
- Creating first draft of methodology backbone
- Aligning first draft with Autoneum program management system
- Iterative methodology backbone development
  - Alignment meetings with IT project leaders
  - Development of methodology backbone (structure)
  - Feedback meetings
  - Fine tuning of methodology based on feedbacks
- Presenting final version to CIO
- Approval by CIO
6.5. Detailed explanation of APMM

In the followings APMM will be explained by its phases, deliverables, roles and responsibilities, reporting and communication strategy and project meetings.

6.5.1. Methodology – overview

As figure number four shows APMM is a methodology based on a project lifecycle point of view, controlled by gates and measured by deliverables. It also includes two supporting processes:

- the vendor selection process and the
- V model of testing.

It is important to mention that both the risk management and the change management are separate processes but despite this they are genuinely important to be considered and handled as a part of APMM.

![Project Management methodology](image)

Figure 4 (Source: Autoneum Management AG internal document)

In each phase, deliverables are defined. A deliverable can be mandatory or optional making APMM flexible: it can be used in case of small projects and in global ones, too. Each mandatory deliverable has to be executed in order to pass the ending gate of the given project phase thereby making the phase completed.
6.5.2. Methodology – Gates & mandatory documents

Phases are separated by gates. These gates must be passed – completed – in order to continue the project with the next phase. Gates can be completed only by their respective signed mandatory documents. As Figure 5 shows, these documents and their related gates are as follows:

- **G-0: CR form signed.** The signed change request form is the starting point of every project. It is a product of the change management process and it is the trigger of APMM. The aim of this document is to document the basic need and requirements, which has to be solved and met by the project’s product(s).

- **G-1: Project Initiation Document.** The Project Initiation Document (PID) gives detailed direction and scope of the project and form the ‘contract’ between project management team and the program management. The PID ensures that the Project Steering Committee has a sound basis before firmly committing to the project. In the project, the PID acts as a base document against which the Steering Committee and Project Manager can assess progress, Project Issues and ongoing viability issues. This document in its structure follows the logical backbone of: what-why-where-who-how-when approach. Any deviations from the content of this document – especially the ones regarding the project’s product(s), budget and quality requirements – must be handled through the change management process and approved by the project’s steering committee. The Project Initiation Document includes the followings:

  - **Project definition:**
    - Objectives of the project: This section should explain the business needs what exactly the product of the project should solve.
    - Scope: In-Scope explained and detailed. Also, it should clarify what is out of scope if it helps describing the scope.
    - Project deliverables and products: deliverables explained in detail.
    - Project constraints: if special constraints exists that could affect the project, those should be listed and explained here. Such constrain could be a parallel project, which deadline is connected to the given ones.
    - Terms of reference: a complete list of references to company standards or other on-going projects.
    - Approach: To define the type of solution to be developed by the project and/or the method of delivering that solution. For example: buying new software, developing a new interface, hiring consultants. It is important to mention that the approach should clarify if a distinct go-live is needed or not (Gate 5).
- **Budget:** If project budget is provided together with the project mandate, then it is to be stated here. It is essential that any deviation from the project plan should be approved by the Project Steering Committee.

- **Time:** How much time is available in order to complete the project? It is essential that any deviation from the project plan should be approved by the Project Steering Committee. The forecasted time consumption of the project should be declared in man-days and per department.

- Quality plan and acceptance criteria: define the quality techniques and standards to be applied, and the various responsibilities for achieving the required quality levels, during the project. It must clearly define ways in which the customer’s quality expectations will be met and it must make sure that the defined ways are sufficient to achieve the required quality. Also, it must conform the corporate’s quality policies.

- Project plan and work breakdown structure: it should contain the most important deadlines, milestones in a standardized structure. A work breakdown structure is: “deliverable oriented hierarchical decomposition of the work to be executed by the project team.” (NASA, 2013).

- Project organization: the roles of the project should be listed here with the appointed colleagues. This should be created as the table below indicates:

<table>
<thead>
<tr>
<th>Role</th>
<th>Mandatory (Yes/No)</th>
<th>Name(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Steering Committee</strong></td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td><strong>Project Manager</strong></td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td><strong>Business Lead</strong></td>
<td>Yes*</td>
<td></td>
</tr>
<tr>
<td><strong>IT Responsible</strong></td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td><strong>CC Delivery Manager</strong></td>
<td>No</td>
<td></td>
</tr>
<tr>
<td><strong>Power user</strong></td>
<td>No</td>
<td></td>
</tr>
<tr>
<td><strong>End user</strong></td>
<td>No</td>
<td></td>
</tr>
</tbody>
</table>

* if project is IT internal, Business Lead is NOT mandatory

- Risk log: Risks should be handled as it is in the Risk Management supporting process and should be included in the monthly project report – generated in the
SharePoint monthly IT Project reporting tool.

- Communication plan: Purpose of the communication plan is to define all parties interested in the project. It contains a description of the means and frequency of communication between them and the project team. The quality of the communication plan is only appropriate if all the listed derivation sources have been checked, all stakeholders have been identified and their communication requirements defined. Also, there is agreement from all interested parties about the content frequency and method.

As the PID is a document for overview and created at a very early point of the project – or before the formal starting of the project – it is also a common ground that other mandatory documents will use.

- **G-2: Functional Design Document.** This document specifies the product(s) of the project and it should be signed by the requester of the project to ensure that the descriptions and requirements are aligned with the business need. Its secondary aim is to make IT teams are able to clearly envision the requirements and realization so that the IT internal technical design can begin. IT includes the followings:
  - Scope: In-Scope explained and detailed. Also, it should clarify what is out of scope if it helps describing the scope.
  - Business requirements: an explanation of the need for the project: exactly what is the gap, and how the product of the project close it. A brief description of dependent objects and links to other related documents (technical design document for example) and the authorization concept.
  - Product functions: functions should be prioritized and categorized as:
    - Must be implemented and tested
    - Should be implemented and tested
    - Nice-to-have: can be implemented and tested after the project development/testing phase, possibly after go-live
  - Acceptance criteria: A clear definition of what should be tested in the Test/Accept phase. It should be based on the product functions, with clarified expected results.
  - Scenarios:
    - Who will use it (not personally but from role point of view)
    - How it will be used (variants, frequency, jobs, processing mode …)
- Known constraints: a list of constraints that must be complied.

- Related non-IT deliverables: a list of deliverables that not IT Department members are accountable for.

- **G-2: Technical Design Document.** It is the derived from the FDD and it is the responsibility of the relevant IT Competence Center to create it and that it should meet the quality requirements. There is no mandatory part of it because of the diversity of the projects and Competence Centers.

- **G-3: Testing Document(s).** At the end of the build phase it is vital to see precisely what and how to test. These documents contains the unit test(s), too. A unit test must include the followings:
  - Date of test execution
  - Test results
  - Test type
  - Unit responsible
  - Test should be executed by whom
  - Task to test
  - Expected results
  - The place of the actual test results

- **G-4: Test Acceptance Document.** If the test were successful and the results meet the requirements – defined in the project initiation, the technical and the functional design documents – then by signing this document, the project can go to the deployment phase. In case the testers encountered an error and the results shows that the products don’t meet the requirements the project must go back to the build phase in order to correct the cause of the problems and the test scenarios have to be updated accordingly.

- **G-5: Go-Live Approval.** It is needed after all required Test Acceptance Documents are signed. If the go-live approval is given, all products can be deployed and the cut-over be executed. This is a special gate because its mandatory document should be signed at the beginning of the phase, not at the end of it.
• **G-6: Deployment Acceptance Document.** After deploying the project’s product(s), the relevant stakeholders have to sign that the deployment was done and everything works as it should be (described in the project initiation document). If there is major problem after or during the deployment the rollback plan should be executed – which is a deliverable of the design phase – in order to minimize the effects of the problem and to be able to continue working with the original conditions.

• **G-7: Project Closing Document.** After the end of effective work, the handover to support and the closing project manager’s tasks – reviews and lessons report – this document verifies the work done and the formal closing of the project. The Project Closing Document – PCD – should be archived appropriately and it includes the followings:
  o Project Manager’s Report: Summary of the whole projects and its deliverables, performance
  
  o Review of the original project outline: Summarizing the validity of the project’s Business Case
    ▪ Benefits achieved to date
    ▪ Residual benefits expected
    ▪ Deviations from the approved PID

  o Review of project objectives and achievements: review of how the project performed against its planned targets and tolerances for time, cost, quality, scope, benefits and risk. Review the effectiveness of the project’s strategies and controls. IT also includes the review of achievements, in particular, providing recognition for good performance.

  o Lessons learned report: review of what went well, what went badly, and any recommendations for corporate or program management consideration (and if the project was prematurely closed, then the reasons should be explained). This may be a separate document and referenced from this location.

  o Summary and follow-on action recommendations: Decide who should receive each recommended action. The recommended actions are related to unfinished work, ongoing issues and risks, and any other activities needed to take the products to the next phase of their life.

The PCD also allows the passing on of any lessons that can be usefully applied to other projects and the passing on of details of unfinished work, ongoing risks or potential product modifications to the group charged with future support of the project’s products in their operational life.
There are two main reasons for this strict gate system. The first is that this way program managers and interested business decision makers can always see the status of projects. The second reason is that by signing these documents, responsibilities are always clear between stakeholders. The signed documents are centrally stored and available for recall in case of complaints or disagreements.
Figure six shows the mandatory documents and their respective responsible, accountable and consulted roles:

<table>
<thead>
<tr>
<th>Gate</th>
<th>Mandatory Document</th>
<th>Responsible</th>
<th>Consulted</th>
<th>Accountable</th>
</tr>
</thead>
<tbody>
<tr>
<td>G-0</td>
<td>Approved CR</td>
<td>Delivered by CM process</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G-1 (Initiation)</td>
<td>Project Initiation Document</td>
<td>Project Manager</td>
<td>IT responsible</td>
<td>Project Steering Committee</td>
</tr>
<tr>
<td>G-2 (Design)</td>
<td>Functional Design Document</td>
<td>Project Manager</td>
<td>IT responsible</td>
<td>Project Steering Committee</td>
</tr>
<tr>
<td>G-3 (Build)</td>
<td>Technical Design Document</td>
<td>IT Responsible</td>
<td>Head of CC, IT PMO</td>
<td>Project Manager</td>
</tr>
<tr>
<td></td>
<td>Unit test</td>
<td>IT Responsible</td>
<td>Head of CC, IT PMO</td>
<td>Project Manager</td>
</tr>
<tr>
<td>G-4 (Test/accept)</td>
<td>System Acceptance Document</td>
<td>Project Manager</td>
<td>IT responsible</td>
<td>Project Steering Committee</td>
</tr>
<tr>
<td>G-5 (Cut over)</td>
<td>Go-live approval</td>
<td>Project Manager</td>
<td>IT responsible</td>
<td>Project Steering Committee</td>
</tr>
<tr>
<td>G-6 (Deployment)</td>
<td>Solution Delivery Document</td>
<td>Project Manager</td>
<td>IT responsible</td>
<td>Project Steering Committee</td>
</tr>
<tr>
<td>G-7 (Closure)</td>
<td>Project Closing Document</td>
<td>Project Manager</td>
<td>IT responsible</td>
<td>Project Steering Committee</td>
</tr>
<tr>
<td>ALL PHASES</td>
<td>Project Plan (also part of PID)</td>
<td>Project Manager</td>
<td>IT responsible</td>
<td>Project Steering Committee</td>
</tr>
<tr>
<td></td>
<td>Risk log (also part of PID)</td>
<td>IT Responsible</td>
<td>Head of CC, IT PMO, CID</td>
<td>Project Manager</td>
</tr>
</tbody>
</table>

Figure 6 (Source: Autoneum Management AG internal document)

The responsibilities above are based on the RACI responsibility assignment matrix – sometimes referenced as linear responsibility chart (Cleland & Lewis, 2006) – where the roles are as follows:

- **R**: responsible. Those who do the work to achieve the task (Smith, 2005). There must be at least one person delegated as a responsible for a deliverable.

- **A**: accountable. The one who is answerable for the completion of the task. An accountable person can delegate the work to someone, who is declared as a responsible for the given task. There must be only one accountable for each deliverable (Tiziana, 2010).

- **C**: consulted. Usually subject matter experts whose opinions are taken into consideration. With them it is always a two-way communication.

- **I**: informed. APMM doesn’t include this role, however in the basic RACI responsibility assignment matrix, stakeholders declared as informed should be kept up-to-date on progress. There is a one-way communication towards them.
6.5.3. Methodology – Project Phases

APMM has six project phases based on the PMBOK methodology and the diverse professional experience of the IT leadership team of Autoneum. These phases are as follows:

1. **Initiation:** this phase contains all arrangements done in order to start working on the project. Its main goal is to create a fundamental basis of needs and requirements against the product(s) of the project, define the available resources, scope and the organizational body of the

2. **Design:** in this phase, the involved stakeholders define the final product(s) of the project through the design – and the technical design document. The project scope and the available resources are frozen and the plan for the next phase should be available in detail.

3. **Build:** the detailed technical specification of the final product(s) are created in this phase and this is where the actual development work is done. By the end of this phase user training and data changes have to be done, too.

4. **Test / Accept:** this is the phase where the product(s) of the project are tested and the necessary acceptance documents are signed. Deployment plan should be ready and agreed by the key business decision makers and involved IT leaders.

5. **Cut-over:** it is paramount to mention that this phase is only applicable in case of a distinct go-live. Essentially it means that all products are released at one particular time (go-live) IT equals with turning off the old solution(s) that is replaced immediately by the product(s) of the project. The period until gate five is dedicated to the preparation of the release.

6. **Deployment:** release of the product(s) into production environment to be used as designed. This phase contains the hypercare period, too. This is where the product(s) of the project receives extra care from the support team. After the hypercare, the solution(s) should be ready for handover to the regular support group in order to continue the project.

7. **Closure:** in this phase the formalization of project completion and the disbanding of project arrangements – including the project team – are done. Before disbanding the team should do the continuous improvement exercise, which is based on the lessons learned report.

6.5.3. Methodology – Deliverables

Deliverables are results of processes and tasks, which are needed or helpful to complete the project on time, on quality and not exceeding the project budget. In APMM there are two kinds of deliverables: mandatory and optional ones. Only the mandatory documents will be discussed
in this section of my thesis because optional ones are required to ensure scalability and will be explained in the section 7.5.4.

Figure seven shows the deliverables of APMM in a matrix, where:

- Columns represents the phases where they are planned to be completed and
- Rows represents the process units whose competence is to complete the task.

The deliverables can be seen in three different writing style: bold and underlined, bold and normal. Each of these styles has a different meaning:

- Bolded and underlined: mandatory deliverable, which must result a mandatory document
- Bolded: mandatory deliverable
- Normal: optional deliverable

![Diagram of deliverables matrix]

In the followings these deliverables will be explained – grouped by project phases.

**Initiation:**

- Project Initiation Document (PID) approved: this is the starting point of all of the projects. Being the result of the change management process it clarifies that there is a distinct need for a project. Its content has been described in section 6.6.2. of this thesis.
• Next stage plan ready and accepted by the Steering Committee (roles and responsibilities of APMM will be discussed in section 7.5.5.) of the project.

• Contracts signed: all necessary contracts with third parties should be signed by the end of the initiation phase in order to be able to start the effective work in later phases.

It is important to mention that an optional process takes place in this phase: vendor selection. This supporting process will be explained in section 7.6.

**Design:**

• Functional Design Document (FDD) approved: the functional design document must be signed by the requester of the project – the business lead role.

• Technical Design Document (TDD) approved: this mandatory document has already been defined in section 6.6.

• Data need defined: if it is not clear how much and what kind of data is needed to complete the project, a thorough analysis should be done to and a data acquisition plan should be created.

• Data conversion plan approved: if any kind of data migration is needed from or to any IT system of the company, a detailed plan should be created in order to prevent incidents rooting from the data migration.

• Support level defined: the support level of the project and the project’s product(s) should be defined.

• Project scope frozen: there must not be any deviation from the project plan from this point of the project. Any need or request for deviation should trigger the change management process and every change request should be accepted by the Project Steering Committee.

• Effort (cost) and planning finalized: the final budget and effort planning should be ready and accepted.

• Next phase plan available in detail.

**Build:**

• Unit Tests done, Unit Test Document approved: it is essential to deliberately test each aspect of the work done in this phase. It can reduce the cost of correction in later phases.

• System build complete: it is evident that it should be ready before it could be tested and accepted.

• Delivery note: it should be clear to each stakeholder of the project that the build – development – part of the requested solution is done and the project can go towards the next phase from a systems point of view.

• Data change complete: all activities regarding data management should be done.

• Test scripts available based on quality criteria in FDD: tests should be done in a structured way. Test scripts provide this structure along with the exact description of
what and how should be tested. It is important to include negative tests, too: what is expected if an error occurs.

- User training plan available: this plan contains who, how and what for should be trained regarding the new product(s) of the project or its connections, interfaces. It should be created based on the business processes containing the product(s) of the given project.
- Project plan should reviewed and the detailed plan for the next phase should be ready.

Test / Accept:

- Systems – with data – tested and accepted: all affected systems should be tested if they work properly. This includes systems that has been available before the project, too.
- Data tested and approved: all affected data should be tested and their compliance be documented and accepted by the relevant stakeholder of the project.
- Acceptance tests executed, acceptance documents signed
- Users trained for acceptance test / users trained for test work: the difference between the two is that user training is not mandatory. It is advised to be done if the user work is complex or it has been changed due to the project’s outcome.
- Integration and regression tests executed: these optional deliveries should be empathized if the project is SAP related.
- Acceptance plan in detail available and approved: this plan frames the structure of the overall acceptance of the build phases’ results.
- Project plan should reviewed and the detailed plan for the next phase should be ready.
- Deployment start approval given: it is essential in order to be able to start the Deployment phase
- Cut-over plan including roll-back plan approved: this deliverable is only applicable if a distinct go-live is needed. The roll-back plan is required so that in case of any unanticipated errors or major incidents would arise, following the roll-back plan the business can go on in its pre-project way.

Deployment:

- Solution delivery document signed
- All impacted end users trained
- All users work with systems as foreseen
- Deployment close confirmed
- P1 and P2 issues resolved, P3 issues recorded and solution plan exists
- Project plan should reviewed and the detailed plan for the next phase should be ready.
- Transition document to support signed
- Support organization took over the project’s product(s)
Cut-over:

- Systems live
- Go-live approval given (cut-over complete)
- Organization and sites are ready for go-live

Closure

- Project Closing Document approved
- Handover to support complete
- Lessons learned exercise done

6.5.4. Methodology – Scalability

Scalability was one of the most important requirement towards APMM because of the reasons described in section 6.2. It could be reached through the following scalable construction elements:

- **Phases**: the fifth phase is optional making APMM scalable for infrastructure and non-infrastructure projects
- **Deliverables**: the high amount of optional deliverables were created in order to make APMM scalable in terms of project size.

6.5.5. Methodology – Project Organization, roles & responsibilities

At its essence project governance means guiding the development organization making it able to produce value that aligns with the needs of the business (Alexander, et al., 2009). APMM projects are governed by the Steering Committee. It can be seen with the rest of the roles in a structured way on Figure 8 below:
The roles and responsibilities for each role and the Steering Committee are as follows:

- **Steering Committee**: the decision making organization of the project
  - Approving project, stage and contingency plans
  - Authorizing any major deviation from agreed plans
  - Approving changes
  - Authorizing the start of each phase
  - Signing off the completion of each phase
  - Resolving any dispute within the project

- **Project Manager**: overall management and ensuring requirements are met with the given resources throughout the project
  - Recruiting, directing and motivating suitable skilled and qualified project team members
  - Planning and monitoring the project (resource, time, scope, financial, quality and risk planning)
  - Clearing communication for the project
  - Documenting the customer acceptance for each project deliverable
  - Producing the Project Plan, the Progress Reports as well as the End Project Report (Kerzner, 2013)
  - Managing and documenting risks
- Taking responsibility of the overall progress and corrective actions
- Controlling resources to ensure delivery within the approved project budget, schedule and on the agreed quality
- Managing the approval of all project change requests
- Resolving all project issues affecting the project
- Being responsible for project administration
- Undertaking all actions necessary to close the project

- **Business Lead(s):** deep knowledge in their respected fields and business requirements
  - To-be consulted in specific cases
  - Creating technical assessment plans

- **Power User(s):** no specific profile, user level knowledge of POB (change management software)
  - Providing user resources
  - Ensuring that the project produces outcomes that meet user requirements
  - Ensuring that the products provide the expected user benefits
  - Promoting focus on the desired project outcome
  - Resolving user requirements and priority conflicts
  - Representing fully all the interests of the different user groups that they represent

- **End Users:** no specific profile
  - Taking part in different kind of user trainings
  - Giving feedback on various parts – mainly product(s) – of the project

- **IT Responsible:** IT development and deep knowledge in his/her respective field
  - Making sure that progress towards the outcome remains consistent from the development perspective
  - Ensuring that the supplier resources required for the project are made available
  - Resolving priority conflicts regarding the development work
  - Advising on the selection of development strategy, design and methods
  - Monitoring potential changes and their impact on the correctness, completeness and integrity of products against their product description
  - Monitoring any risks in the production aspects of the project
  - Ensuring that quality control procedures are used correctly, so that products adhere to requirements

- **CC (Competence Center) Delivery Manager:** interpreting the work to be done to the CC team and coordinating their work.
o Ensuring a common understanding between the CC team and the rest of the project team.
o Helping the project manager with tasks regarding the CC team

- **IT Specialist(s):** deep knowledge in their respective fields
  o To-be consulted in specific cases
  o Creating technical assessment plans

There may be exception from these roles in terms of creating plus roles or leaving out specific ones but these exceptions should be reasoned approved by the Steering Committee.

### 6.5.6. Methodology – Project Reporting and communication strategy

Reporting and communication are two vital parts of APMM because these ensures a solid, common understanding of deliverables, resources and the current status of the project between stakeholders, which is essential for a successful completion.

**Communication strategy:** it is mandatory plan embedded in the PID. It can be different in each project to ensure flexibility: for a small project an informing mail to the relevant stakeholders can be enough but in case of bigger one, a detailed plan might be necessary. In both cases the approval of the Steering Committee is mandatory – as a part of the approval of the PID.

**Project Reporting:** it is pre-defined and mandatory recurring deliverable of all APMM projects. It has a mandatory part and optional ones. Its mandatory part is the monthly project status report. It gives an “at-a-glance” overview of the project’s status. Its contents are as follows:

- Project title
- Organizational unit
- Reported period
- Current phase
- IT responsible
- Business responsible
- Project description
- Execution current period (tasks & deliverables done in the reported period)
- Execution next period (tasks & deliverables planned to do in the next period)
- Risk management & mitigation
- Overview of project plan
- Budget
- Resource plan (used mandays per Competence Centers, planned future mandays per Competence Centers)
Figure nine shows an example report. These reports are discussed during the monthly project reviews, which are one-to-one reporting sessions between the CIO and the IT Responsibles.

Project reporting has an optional part, too: deliverables follow-up. It is used in case:

- further explanation needed of a specific deliverable
- the completion of the given deliverable takes considerable amount of resources and should be controlled
- there is a high amount of risk in terms of completion on quality, time or on budget.

Figure ten shows the template for the deliverable follow-up:
### Figure 10 (Source: Autoneum Management AG internal document)

It is important to mention that sketch should be made from each meeting in a pre-defined format – meeting minutes – that ensures that all helps in documenting all relevant information from the given meeting. This template can be seen in section 9.2 of this thesis under “Appendixes” (Autoneum Management AG, 2014-2015).

#### 6.5.7. Related processes

These processes are not part of APMM but they can or should be used in certain scenarios.

- **V-model of testing**: this process defines how should the testing be done using the planning resources (design plans) of the project. It is an unaltered testing method of a well-known best practice (Forsberg & Mooz, 1991).

- **Change Management (CM) process**: this process is responsible for controlling the lifecycle of all changes and change requests. The primary objective of Change Management is to enable beneficial changes to be made, with minimum disruption to IT Services. Autoneum Management AG IT Department is running a global IT Change Request process, into which the projects integrate their IT related change requests. Not necessarily is every change on a project relates to change in IT thus the project’s change management process cannot be substituted by the global IT CR process on a project.

The following two processes have been created as a part of APMM but as requirement interviews have been conducted these processes have been considered useful for other parts of the company’s business as usual scheme. Thus these processes have been separated and handled as supporting processes.

<table>
<thead>
<tr>
<th>Milestone date</th>
<th>Area</th>
<th>Milestone to be Completed</th>
<th>Responsible</th>
<th>Status (done/ WIP)</th>
<th>Ready by date</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>24.10.2014</td>
<td>Systems</td>
<td>All approved gaps and localizations for ANA have been successfully unit, integration and acceptance tested</td>
<td>Xy</td>
<td>WIP</td>
<td>24/10</td>
<td>Status and action plan provided. To be approved by project management</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Resolutions available for all identified issues to be resolved and accepted or a mutually agreed mitigation plan in place</td>
<td>YY</td>
<td>WIP</td>
<td>24/10</td>
<td>Currently still 85 incidents open from before Oct 24 all assigned to Autoneum</td>
</tr>
<tr>
<td></td>
<td>Data</td>
<td>Data migration and enrichment successfully finished</td>
<td>XX</td>
<td>WIP</td>
<td>n/a</td>
<td>Blanch payment terms: manual entry New load for previously de-selected items &amp; BOMs: will not be carried out</td>
</tr>
<tr>
<td></td>
<td>Management</td>
<td>ILO have completed all responsible go-live / cutover activities in line with agreed cutover plan</td>
<td>ABC</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
- **Vendor selection process:** should be used in case of a third party developer, supplier or vendor is needed in order to complete the project. The process describes how a vendor selection should be carried out (Weber, et al., 1999).

  It is a four step process:
  
  o 1: Requirement definition
  o 2: Vendor filtering
  o 3: Request for quotation
  o 4: Evaluate responses, vendor selection

  Figure eleven is an overview of the vendor selection process showing the required inputs, activities and deliverables for each step of the process.

<table>
<thead>
<tr>
<th>INPUT</th>
<th>Requirement definition</th>
<th>Vendor filtering</th>
<th>Request for Quotation</th>
<th>Evaluate responses, vendor selection</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>Define the requirements towards future vendor</th>
<th>Create a list of potential vendors. Send request for proposal to selected vendors</th>
<th>Send request for quotation to selected vendors</th>
<th>Compare the quotes of potential vendors. Close vendor selection process</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>DELIVERABLE</th>
<th>Requirements specification</th>
<th>Request for proposals sent to selected vendors. Responses of selected vendors</th>
<th>Request for quotation Responses to request of quotation</th>
<th>Draft of contract with selected vendor. Response comparison document</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>ACCOUNTABLE</th>
<th>Project manager</th>
<th>Expert group &amp; project manager</th>
<th>Expert group &amp; project manager</th>
<th>Steering Comm. (proposal: PM)</th>
</tr>
</thead>
</table>

Figure 11 (Source: Autoneum Management AG internal document)

- **Risk Management process:** this process defines how risks should be handled during the project. It contains risk types and practices on how to mitigate them (S. Waite & Charles W., 1990).

  APMM uses the risk definition of the ISO 31000 standard: a risk is an uncertain event or set of events that should they occur will have a material effect on the achievement of the project’s objectives (time, quality, cost, scope benefits). It is because there is a great uncertainty about project organizations ability to meet project goals (Tony & Faisal, 2008). If the risk materializes it becomes an issue, which should be contained in the Project Plan (CM process).
Figure twelve shows an overview of the Risk Management process:

<table>
<thead>
<tr>
<th>INPUT</th>
<th>Uncertain event detected</th>
<th>Risk log</th>
<th>Risk log</th>
<th>Mitigation options</th>
<th>Mitigation plan</th>
<th>Risk situation Mitigation actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACTIVITY</td>
<td>Enter risk into risk log</td>
<td>Examine, study, categorize risk</td>
<td>Identify suitable mitigation options to handle the risk</td>
<td>Select and implement most suitable mitigation option</td>
<td>Execute selected mitigation option (action plan as needed)</td>
<td>Monitor mitigation effect and risk impact &amp; probability, adjust response as necessary</td>
</tr>
<tr>
<td>DELIVERABLE</td>
<td>Risk log updated</td>
<td>Risk log updated with defined risk parts (Cause, Event, Effect)</td>
<td>Mitigation options</td>
<td>Mitigation plan</td>
<td>Mitigation actions</td>
<td>Risk log, mitigation plan updated</td>
</tr>
<tr>
<td>ACCOUNTABLE</td>
<td>Any member of the project</td>
<td>Expert group &amp; project manager</td>
<td>Expert group &amp; project manager</td>
<td>Steering Comm. (proposal, PM)</td>
<td>Project Management</td>
<td>Project Management</td>
</tr>
</tbody>
</table>

Figure 12 Source: (Autoneum Management AG internal document)

A risk can be a threat or an opportunity. According to PRINCE2 methodology, the followings are potential handling options:

- Threat
  - Avoid
  - Share
  - Reduce
  - Accept
  - Fallback
  - Transfer

- Opportunity
  - Share
  - Enhance
  - Exploit
  - Reject

APMM uses a centralized SharePoint site to track and manage risks, threats and opportunities.
7. Implementing the new methodology

7.1. The implementation project

Autoneum decided to create and implement the new methodology as a project lead by the Head of IT Project Management Office (PMO). It was an eight months long period, divided into two parts:

- Creation of APMM: 5 months
- Implementation of APMM: 3 months

The new methodology could be implemented in three months because it has been created in an agile way, in iterative cycles (Schwaber, 2010). In the beginning of each cycle, interviews have been conducted with the IT leadership team of Autoneum ensuring that the methodology fits their expectations, includes all essential deliverables and regards all related topics and project management areas. This period gives space to the conversion of the legacy projects ensuring their compliance. Also the hypercare period gives opportunity for stakeholders to raise questions regarding the implementation, legacy projects or APMM itself.

During the implementation project, several challenges arose. The hardest ones to solve were the followings:

- Summer is a vacation period: it was a challenging task to organize the meetings for the IT Leadership team. There was no other option for the CIO wanted to implement the new methodology in the fiscal year of 2015 and Q4 had been reserved for other strategic purposes.

- Considerably different requirements from the new methodology: APMM requires a whole new approach from project managers that could be a hard change for them because being a PM is a role at Autoneum, not a position.

- Scalability issues: the new methodology has to be highly flexible for it has to support local projects and global initiatives, too. The difference between the two extremes can be years or millions of Swiss Francs.

- Difficulties at the Chinese division: on the second day of the implementation project, difficulties aroused at the Chinese plant of the company making the Head of IT PMO unavailable in person.
The implementation project had a three-months-long hypercare period where dedicated help and attention was given to the users – the IT leadership team in terms of methodology and software side.

The project ended with an official closure – according to what had been described in the Closure section of APMM.
8. Conclusions

In summary the creation and implementation of a scalable IT project management methodology was the next step for a well-coordinated and global project management office. It was a considerable effort and it had been clear from the beginning that on what purpose was the company doing it and what residual benefits would remain for the long run. The implementation was a success. Continuous attention is needed to maintain and increase benefits in order to achieve the desired long term ROI – Return On Investment (Phillips & Phillips, 2010).

The result of the creation process – APMM – meets the flexibility and practicality requirements. Also, it has been accepted by the IT leadership team. It will be further improved to the business and future changes but some conclusions can already be deducted:

- Only important and unique requirements force an organization to create its own methodology.
- The creation and implementation of such a methodology is an organizational change management on its own. It means that it bears the risks of one, too.
- It is important to keep in mind that people will be the ones who will use the new methodology. Making it difficult to understand or use will generate a negative approach towards it and it could minimize the benefits of it.
- Step-by-step approach: continuous improvement is preferred instead of a big-bang or a BPR – Business Process Reengineering – one. It gives time for the organization to adopt the new methodology and employees to transform their project management routine – or raise questions, ask for assistance.

APMM differs from the discussed methodologies – PMBOK/PMI, PRINCE2, Sure Step – in many ways but the main and most important differences are as follows:

- Deliverables: the complex ecosystem of mandatory and optional deliverables ensures the needed scalability that enables APMM to be used by various project types and project sizes.
- Project reporting: The governance of the project is standardized and done by exact tools making it more specialized than general best practices.

In summary, APMM is a usable and scalable IT project management methodology that has been successfully created, continuously aligned during the creation process and implemented with a step-by-step approach at a multinational company.
## 9. Appendix

### 9.1. Complete deliverables list of APMM

<table>
<thead>
<tr>
<th>Phase</th>
<th>Area</th>
<th>Deliverable to be completed</th>
<th>Comment</th>
<th>Mandatory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initiation</td>
<td>Systems</td>
<td>Initial analysis done</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Initiation</td>
<td>Business</td>
<td>Business requirements outlined</td>
<td>Deliverable of the CR process</td>
<td>Yes</td>
</tr>
<tr>
<td>Initiation</td>
<td>Business</td>
<td>SRS available</td>
<td>Deliverable of the CR process</td>
<td>No</td>
</tr>
<tr>
<td>Initiation</td>
<td>Management</td>
<td>ITPC approved</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Initiation</td>
<td>Management</td>
<td>Project organization defined, responsible appointed</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Initiation</td>
<td>Management</td>
<td>Initial project plan available</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Initiation</td>
<td>Management</td>
<td>Initial effort analysis available</td>
<td>Deliverable of the CR process</td>
<td>Yes</td>
</tr>
<tr>
<td>Initiation</td>
<td>Management</td>
<td>Vendor selection done</td>
<td></td>
<td>No</td>
</tr>
<tr>
<td>Initiation</td>
<td>Management</td>
<td>Contracts signed</td>
<td></td>
<td>No</td>
</tr>
<tr>
<td>Initiation</td>
<td>Management</td>
<td>Evaluation project done</td>
<td>In case of &quot;big&quot; projects</td>
<td>No</td>
</tr>
<tr>
<td>Design</td>
<td>Systems</td>
<td>System design complete</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Design</td>
<td>Systems</td>
<td>CCs involvement clarified</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Design</td>
<td>Systems</td>
<td>System architecture change approved</td>
<td></td>
<td>No</td>
</tr>
<tr>
<td>Design</td>
<td>Data</td>
<td>Data need defined</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Design</td>
<td>Data</td>
<td>Art of migration defined</td>
<td></td>
<td>No</td>
</tr>
<tr>
<td>Design</td>
<td>Business</td>
<td>Business requirements specified (PDD)</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Design</td>
<td>Business</td>
<td>Support level defined</td>
<td></td>
<td>No</td>
</tr>
<tr>
<td>Design</td>
<td>Management</td>
<td>Project scope frozen</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Design</td>
<td>Management</td>
<td>Effort (cost) and planning finalized (go-live committed)</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Design</td>
<td>Management</td>
<td>Project plan finalized</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Design</td>
<td>Management</td>
<td>Next phase plan in detail available</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Design</td>
<td>Management</td>
<td>Contracts updated</td>
<td></td>
<td>No</td>
</tr>
<tr>
<td>Design</td>
<td>Management</td>
<td>Budget reviewed and finalized</td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>Design</td>
<td>Management</td>
<td>Rollback plan ready</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>-------------------------</td>
<td>--------------------</td>
<td>---------------------</td>
<td>----</td>
<td></td>
</tr>
<tr>
<td>Build</td>
<td>Systems</td>
<td>System build complete (based on design)</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Build</td>
<td>Systems</td>
<td>Unit tests (system side) done</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Build</td>
<td>Data</td>
<td>Data change complete</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Build</td>
<td>Business</td>
<td>Test scripts (based on requirement doc) available</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Build</td>
<td>Business</td>
<td>User training plan available</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Build</td>
<td>Management</td>
<td>Test plan prepared, approved</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Build</td>
<td>Management</td>
<td>Test organization approved, resources allocated and available</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Test / Accept</td>
<td>Systems</td>
<td>Integration test executed</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Test / Accept</td>
<td>Systems</td>
<td>System accepted, acceptance document signed</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Test / Accept</td>
<td>Data</td>
<td>Data tested in integration test</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Test / Accept</td>
<td>Business</td>
<td>Users trained for test work</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Test / Accept</td>
<td>Business</td>
<td>Tests executed</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Test / Accept</td>
<td>Business</td>
<td>Users trained for Acceptance</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Test / Accept</td>
<td>Business</td>
<td>Acceptance complete &amp; given</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Test / Accept</td>
<td>Management</td>
<td>Test successfully completed</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Test / Accept</td>
<td>Management</td>
<td>Acceptance plan in detail prepared, approved</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Test / Accept</td>
<td>Management</td>
<td>Acceptance organization approved, resources allocated and available</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Test / Accept</td>
<td>Management</td>
<td>Test management sub process (V model)</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Test / Accept</td>
<td>Management</td>
<td>Acceptance given</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Deployment</td>
<td>Systems</td>
<td>Deployment completed</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Deployment</td>
<td>Systems</td>
<td>System stabilized and P1, P2 issues resolved, P3+ issues recorded &amp; resolution plan exist</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Deployment</td>
<td>Systems</td>
<td>Cut over complete</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Deployment</td>
<td>Data</td>
<td>Go-live (Data cut-over) completed</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Deployment</td>
<td>Business</td>
<td>All impacted end users trained</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>---------------------</td>
<td>-----------------</td>
<td>--------------------------------</td>
<td>-----</td>
<td></td>
</tr>
<tr>
<td>Deployment</td>
<td>Business</td>
<td>Go-live work performed, complete</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Deployment</td>
<td>Business</td>
<td>Users trained for Go-live work</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Deployment</td>
<td>Manage</td>
<td>Go/ No-Go decision taken</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Deployment</td>
<td>Manage</td>
<td>SLA change approved</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Deployment</td>
<td>Manage</td>
<td>Support organization took over</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Deployment</td>
<td>Manage</td>
<td>Organization &amp; Sites ready for go-live</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Deployment</td>
<td>Manage</td>
<td>Go-live plan in detail prepared, approved</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Deployment</td>
<td>Manage</td>
<td>Go-live organization approved, resources</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Closure</td>
<td>Systems</td>
<td>POB system updated</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Closure</td>
<td>Manage</td>
<td>Handover to support complete</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Closure</td>
<td>Manage</td>
<td>Project closed</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Closure</td>
<td>Manage</td>
<td>Plan vs actual analysis done</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Closure</td>
<td>Manage</td>
<td>Stakeholders informed about close</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Closure</td>
<td>Manage</td>
<td>Lessons learned exercise done</td>
<td>Yes</td>
<td></td>
</tr>
</tbody>
</table>
9.2. Meeting minutes template

![Meeting Minutes Template](image)

Figure 13 (Source: Autoneum Management AG internal document)
10. Reference List


11. Figure list

1. Figure: Place of project management in a company’s management system, page 8.

2. Figure: Overview of Sure Step methodology, page 15.

3. Figure: IT Department’s organizational chart of Autoneum, page 18.

4. Figure: Overview of APMM, page 21.

5. Figure: Overview of APMM gates, page 27.

6. Figure: Mandatory documents of APMM, page 28.

7. Figure: Deliverables of APMM, page 30.

8. Figure: Project organizational scheme, page 34.

9. Figure: Project status overview theme, page 37.

10. Figure: Deliverable follow-up template, page 38.

11. Figure: Vendor selection process overview, page 39.

12. Figure: Risk management process overview, page 40.

13. Figure: Meeting Minutes template, page 46.