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Project controlling and monitoring management

Case: Sampo-Rosenlew Ltd

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ABSTRACT

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The thesis aimed to control and monitor the Sampo-Rosenlew project. The client of the thesis was Sampo-Rosenlew Ltd, which manufactures combine harvesters, and forestry machines and offers its maintenance services to customers around the world.

Sampo-Rosenlew old plot combine needed to be moderated again, which is why we made the project here, also customers in the United States had asked for this combine. We started the project by planning each phase and from this, it emerged that the project would need someone to coordinate the flow of the project, which is why the project manager gave me the reins and a good thesis topic. I took care during the project that all the steps were done, and we stayed up to date, I used different project management tools and excels for these controls. The most important were the Gate Deliverables Assessment Sheet, the Gantt sheet, and the IFS ERP system.

We noticed very soon after the start of the project that moderating the parts took longer than expected, which is why the project was delayed. However, the result of the research is that the project was completed successfully.

Keywords: Project Management, Project, Controlling, monitoring, Combine Harvester

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1 INTRODUCTION

Sampo-Rosenlew Ltd is a Pori-based company that manufactures forestry machines and combined harvesters. As the client of the thesis, the company gave the topic of the thesis which is project management: controlling and monitoring the project. (Sampo Rosenlew 2022; Sampo Rosenlew n.d.)

The author of the research work has completed the internship related to the bachelor's degree in international business in management at Sampo Rosenlew. This gives a good foundation for the thesis because the overall picture of the business has been formed and it is easier to make a project.

1.1 The goal

The main goal of this research is to delve into the complexity of monitoring and control in the context of the Sampo-Rosenlew project, where an old combine harvester model is being redesigned. This study aims to examine the project management strategies used to monitor and control different aspects.

1.1.1 Project goals and customer needs:

The research was part of a project where we developed an old combined with nowadays parts, i.e. we renewed the old model with modern spare parts.

In my role in the project, I make sure that everyone is aware of important updates and that the schedule is followed. I focus on communication and coordination to ensure smooth progress and successful implementation of the project. I am not directly involved in the technical aspects of the combine redesign, but rather I oversee the overall project management and ensure that all stakeholders are aligned and work towards the common goal of delivering a high quality and innovative product to the market.

The redesigned combine harvesters are aimed at farmers who want to optimize productivity, streamline operations and adopt sustainable farming practices.

The goal is to offer a solution that meets the changing needs of modern agriculture and exceeds industry standards. Factors such as customer preferences, production schedules and resource allocation are important in the production process. Despite challenges such as import delays and global uncertainties, Sampo-Rosenlew is committed to delivering a well-defined production schedule, following development methods and using resources efficiently.

The success of the project strongly depends on effective project management and communication, which promotes the goal of reviving outdated combine harvester models.

The result of the thesis significantly affects the completion of the project, staying on control, schedule and budget.

1.1.2 Monitoring and control strategies:

To ensure the success of the project, there are solid monitoring and control strategies in place.

Regular progress reviews, adherence to schedules and constant communication with employees contribute to effective project management.

Key performance indicators, such as development milestones and resource usage, are closely monitored to reduce risks and ensure compliance with customer expectations.

2 SAMPO- ROSENLEW LTD

In the heart of Pori, Sampo-Rosenlew Oy boasts a rich legacy that spans over 150 years, with industrial roots dating back to 1853 when the esteemed family business, Oy W. Rosenlew Ab, embarked on its journey. Established in 1991, Sampo-Rosenlew Oy has evolved into a globally recognized manufacturer of high-calibre combine harvesters and forestry machinery. (Sampo Rosenlew 2022; Sampo Rosenlew n.d.)

The production saga of combine harvesters commenced in 1957, and over the past seven decades, these agricultural marvels have been dispatched to approximately 50 countries. Notably, around 90 per cent of Sampo-Rosenlew's products traverse international borders, underscoring the company's unwavering commitment to global excellence. (Sampo Rosenlew 2022; Sampo Rosenlew n.d.)

With a strategic focus on customer-oriented product development, Sampo-Rosenlew continually seeks new markets, tailoring concepts for developing countries. As the company charts its course into the future, the dissemination of knowledge abroad will naturally give rise to country-specific supplier networks, adept at addressing nuanced needs for components and spare parts. (Sampo Rosenlew 2022; Sampo Rosenlew n.d.)

Noteworthy is the recent integration of Sampo-Rosenlew into the Mahindra Group, a strategic move that propels the company into new horizons of

innovation and global collaboration. (Sampo Rosenlew 2022; Sampo Rosenlew n.d.)

This thesis endeavours to unravel the intricate tapestry of the Sampo-Rosenlew project, scrutinizing the project management strategies applied during the redesign of legacy combine harvesters. With a specific focus on monitoring and controlling, we aim to distil valuable insights that bridge the gap between historical craftsmanship and the demands of modern agricultural machinery.



Figure 1. Pori production plant. (Sampo-rosenlew, 2024)

2.1 Combine harvester



Figure 2. Sampo-rosenlew's combine harvester COMIA. (Sampo-rosenlew, 2024)

2.2 Forest Harvester



Figure 3. Sampo-rosenlew's Forest harvester. (Sampo-rosenlew, 2024)

3 PLOT MODEL

Sampo-rosenlew's plot model is combine harvester which is designed for experimental fields and seed breeding. (Sampo Rosenlew, 2024.)



Figure 4. Old Plot model. (Sampo-Rosenlew, 2024)

The most important features of the combine:

The plot model maintains its solid structure, which guarantees durability and reliability in demanding harvesting conditions.

Efficient and reliable cleaning system: While maintaining its efficient cleaning system, it still offers optimal grain cleaning, enhancing overall productivity. However, it retains its ability to be equipped with special units, which allows for versatility in different harvests.

Modernized Cab: The Plot's cab, which has been updated with a modern V8 configuration, improves operator comfort and control and improves overall logging efficiency. The old version will also be replaced with modern heating and radio systems.

Engine Upgrade: Upgraded to at least 100 horsepower, the SR 2010 now meets EU and US emissions standards, ensuring regulatory compliance and improved performance.

Hydraulic discharge screw release: Equipped with a hydraulic discharge screw release device, provides greater comfort and efficiency during grain unloading.

Modern Design: Featuring modern design elements, the new version now offers aesthetic improvements, further enhancing its appeal and functionality in modern agricultural environments.

The Sampo-Rosenlew Plot combine undergoes significant upgrades to meet the changing needs of modern agriculture. (Sampo Rosenlew, 2024)

4 PROJECT MANAGEMENT

The term "project" refers to a unique entity that is bounded by time, scope, and cost. Characteristic features of a project include temporary nature, a clear objective, tasks that contribute to the project's goal, defined resources, a coordinating leader, and uncertainty related to the outcome, i.e., risk. (Project Management Institute, 2013, p. 3)

Tasks typically involve content that the normal organizational structure of a company does not handle daily, for example a new product. (Artto, Martinsuo & Kujala 2011, 85.)

Effective project management requires sufficient expertise to achieve the desired outcome as effectively as possible. A project comprises an organization with common objectives. A project organization operates more flexibly and efficiently than a basic organizational structure. Projects can be classified in various ways, such as development projects, product development projects, investment projects, information system projects, etc. (Project Management Institute, 2013, p. 4)

4.1 Project management methods

There are as many ways to do projects as there are companies, which is why each company chooses the methods and applications that suit them; however, many companies use Kanban, Scrum and Lean most often. (Coursera, 2024)

4.1.1 Kanban model

Kanban is both a tool and a methodology used to organize project's schedule.

Kan

ban's goal is to finish the project on schedule and to improve the progress of the work. (Coursera, 2024)

In the visual board there is sections, where each section has its own step or work task. They move according to where the project is at any point. Example columns might include: "Progress", "Waiting" and "Completed". (Coursera, 2024)

As tasks progress, they transition between columns, upcoming phases, and the overall workload distribution. The Kanban methodology helps identify bottlenecks and prevents work from accumulating in one phase. (Coursera, 2024)

4.1.2 Scrum Model

Scrum is an agile project management methodology used for team collaboration and project management. It relies on a flexible and iterative approach to help teams deliver value quickly and adapt to changes. In Scrum, projects are broken down into small parts called sprints, during which specific tasks are focused on. (Coursera, 2024)

The main features of the Scrum method:

Scrum defines three main roles: Product Owner, Scrum Master and Development Team. Product owner defines and prioritizes tasks, while the Scrum Master ensures adherence to the Scrum methodology. The Development Team is responsible for task execution. (Coursera, 2024)

Sprints: are isolated into little increases known as sprints, each enduring regularly 1- 4 weeks, amid which the group centers on particular tasks.

Backlog: The backlog comprises of a list of errands that require to be completed amid the project. For each sprint, a subset of errands is selected from the excess for the group to work on. (Coursera, 2024)

Stand-ups: The team is meeting to discuss tasks, upcoming work, and any impediments. (Coursera, 2024)

Sprint Audit and Review: After each sprint, a survey is conducted to showcase achievements to the Item Proprietor and partners. (Coursera, 2024)

This is taken after a review to assess what went well and how to progress in the following sprint. (Coursera, 2024)

Scrum technique empowers adaptability and quick responsiveness in venture administration, encouraging ceaseless esteem conveyance with the group taking possession of organizing their work. Whereas especially popular in program development, Scrum can be connected to different ventures and group settings. (Coursera, 2024)

4.1.3 Lean Model

Lean project management focuses on effectiveness, minimizing assets, and maximizing esteem in venture execution. The objective is to dispose of squander, i.e., anything that does not include esteem to the extend. Lean standards point to streamline forms and designate assets as it were where really

required. Persistent advancement and input utilization are too emphasized for future extend arranging. (Coursera, 2024)

Lean project management is derived from lean production philosophy, widely applied across various industries, not limited to manufacturing but also to project management, services, and processes. (Coursera, 2024)

4.2 Project Management Charts

A Gantt chart is a tool used to represent tasks and their schedules in a project. It displays blocks representing tasks and their expected durations. Henry Gantt, the creator of the Gantt chart, is also credited with developing the work breakdown structure (WBS). The project is divided into smaller components in the WBS, making it easier to manage progress and allocate tasks to different individuals. (Coursera, 2024)

In substance, a Gantt chart helps visualize what tasks require to be done, how long they should take, and when they are planned to happen. This helps the extend group and stakeholders in understanding venture advance and time-lines. (Coursera, 2024)

Project administration program frequently includes Gantt charts, making it simple to visualize extend advance specifically inside the extend administration instrument. Whereas Gantt charts can moreover be made in spreadsheet computer program, building them specifically inside extend administration computer program is ordinarily much less demanding and more consistent. (Coursera, 2024)

Gantt Chart

Task Name	Q1 2019			Q2 2019		Q3 2019
	Jan 19	Feb 19	Mar 19	Apr 19	Jun 19	Jul 19
Planning		■				
Research		■				
Design			■			
Implementation				■		
Follow up					■	

Figure 7. Gantt Chart (Product Plan, 2018)

4.3 Project Team

The project team is a collaborative effort consisting of the project manager, project management staff, and other team members who contribute to achieving the project's objectives. These individuals come from diverse backgrounds, each bringing specific subject matter knowledge or skill sets to the project. (Project Management Institute, 2013.)

Roles within the project team include:

- Project Management Staff: Responsible for project management activities. Another word: A project management office (PMO).
- Project Staff: Carry out the work of creating project deliverables.
- Supporting Experts: Perform activities necessary for developing or executing the project management plan, such as contracting, financial management, logistics, and quality control. (Project Management

- User or Customer Representatives: Members of the organisation who will accept project deliverables, ensuring proper coordination and validating results.
- Sellers: External companies contracted to provide components or services necessary for the project, with the project team overseeing their performance and deliverables.
- Business Partner Members: Assigned from partner organisations to ensure proper coordination with the project.
- Business Partners: External companies with specialised expertise or roles, providing support in areas such as installation, customisation, training, or support. (Project Management Institute, 2013)

The project manager serves as the leader of the team, regardless of their authority over team members, ensuring cohesion and direction throughout the project's lifecycle. (Project Management Institute, 2013)

5 KEY AREAS OF PROJECT MANAGEMENT

When we talk about the areas of project management, we are not talking about the ways of doing the project, but about which areas must be involved to succeed.

5.1 Planning

Upon starting a venture, it's vital to characterize a clear, measurable objective, and metrics, and decide the scope of the venture. The objective serves as a guiding guideline all through the venture length and acts as an apparatus for extend administration, helping in organizing various errands inside

the venture. Measurements help in assessing the victory of the extend upon completion. Also, clarifying the extend scope is fundamental to avoid mistaken assumptions with respect to what is included in the extend deliverables. e. (Artto, Martinsuo & Kujala 2011, 87.)

During ventures, changes happened happen, counting clear increases, which may give grounds for extra charging by benefit suppliers. Regularly, the required assets for a venture are considered amid the proposal stage. For occasion, how could counselling firms submit a proposition without characterizing the required workload, vital subcontracting, project-related purchases, etc., amid the proposition stage? Once the scope and objective of the extend are decided, the fundamental assets are fastidiously planned, and a staged venture arrange is created. e. (Artto, Martinsuo & Kujala 2011)

A project plan aids in project management. Projects requiring expertise from various specialists need to be carefully planned and scheduled since different skills are often needed in a specific sequence. (Project Management Institute, 2013)

At this point, the companies make a project plan. While not essential for the smallest projects.

1. Establishing a common direction - clarifies project objectives, resources, and responsibilities. (Artto, Martinsuo & Kujala, 2011)
2. Transparency in scheduling - when project phases are defined and scheduled in advance, both the client and the service provider can easily track whether the project is on schedule. (Artto, Martinsuo & Kujala, 2011)
3. Risk management - the project plan should identify and address risks in advance. (Artto, Martinsuo & Kujala, 2011)
4. Quality communication - a good project plan provides a clear basis for communication among various stakeholders. (Artto, Martinsuo & Kujala, 2011)

5. Change management - a written project plan effective management of changes. (Artto, Martinsuo & Kujala, 2011)

The initial version of the project plan is developed during project initiation and describes the project's execution, not yet the final outcome. It's important to note in planning that only future aspects of the project can be influenced, not the past. The project manager is responsible for creating the plan, which they do with the assistance of the project team. The focus should be on what needs to be done, who will do it, and when. Planning should be dynamic and purposeful. Only plan what is necessary for task execution to avoid unnecessary complexity and rigidity, which consumes time and resources unnecessarily. (Project Management Institute, 2013)

Project goals must be specific and measurable. Typically, the following types of goals are set for projects:

- Time goals: project duration and earliest start date.
- Cost goals.
- Production and capacity goals.
- Technical goals.
- Safety goals.
- Environmental goals. (Project Management Institute, 2013)

It's important in project definition to analyze the ideas and problems that have prompted the need to start the project and the benefits being pursued. (Project Management Institute, 2013)

Projects must be carefully scoped from the outset to ensure that estimated schedules, workloads, and quality are not compromised. Incorrect or ambiguous project scoping is one of the most common reasons for project failures. When scoping, it's essential to focus on the defined scope because one project cannot address all issues at once. The most successful projects have clear and realistic objectives. (Project Management Institute, 2013)

Below is an example of a project plan content:

1. Definitions:
 - Introduction and background
 - Project output objectives
 - Scope and interfaces
2. Organization:
 - Project team
 - Steering group
 - Contacts
3. Implementation plan:
 - Partition and implementation phases
 - Schedule
 - Task list
 - Resource plan
 - Risk assessment
4. Budget:
 - Project budget
 - Cost monitoring
5. Control plan:
 - Meeting plan
 - Communication
 - Monitoring and reporting
 - Training plan
 - Quality assurance.

5.2 Procurement

In the realm of project management, sourcing external resources is a critical component. These resources encompass a broad spectrum, including equipment, machinery, materials, personnel, raw materials, and outsourced services. Effectively managing procurement processes is paramount to the success of any project, necessitating careful coordination of acquisition execution and timing. Key considerations in procurement decisions include:

- Determining the authority responsible for making procurement decisions within the project.
 - Identifying potential sources from which quotations will be solicited.
 - Assessing the type of bidding process to be employed and its impact on the project timeline.
 - Establishing the maximum allowable expenditure for each resource.
 - Specifying the timeframe within which each resource must be made available for project use.
 - Defining performance standards or specifications that the acquired resources must meet.
 - Strategizing the acquisition and utilization of necessary personnel resources to optimize effectiveness and efficiency in project execution.
- (Project Management Institute, 2013)

5.3 Timing

When you're planning a project schedule, it's crucial to estimate how much work each task will require. This estimation process can be quite tricky and is often done based on intuition. However, if you have two experienced experts on the project who can give independent estimates, averaging their assessments can provide a more reliable estimate. The workload for a task isn't just about how long it will take; it also depends on the person's experience. It's usually best to involve the individuals who will be doing the tasks in the estimation process to ensure accuracy. (Project Management Institute, 2013)

Breaking down the project into smaller parts, known as decomposition, can help in determining workloads. By dividing the project into smaller components, then into subcomponents, and finally into tasks lasting no more than two weeks each, you can create a foundation for the project schedule. However, at this stage, the specific order in which tasks will be performed isn't decided yet. (Project Management Institute, 2013)

When assigning tasks to individuals, it's important to consider their level of experience. For example, a task may take much longer for a trainee than for an experienced professional. Understanding these differences in workload estimation is crucial for effective project planning. (Project Management Institute, 2013)

Creating a project schedule involves several steps, including identifying tasks, clarifying task dependencies, assessing resource availability, estimating workloads and durations, actually creating the schedule, and then monitoring and adjusting it as the project progresses. (Project Management Institute, 2013)

Task dependencies must also be considered when planning the schedule. Some tasks can only be done in a specific order, while others can be done simultaneously. Understanding these dependencies helps ensure that the project progresses smoothly. (Project Management Institute, 2013)

The critical path, which is the sequence of tasks that determines the overall project duration, is a key concept in project scheduling. By identifying the critical path, you can focus on tasks critical to the project's timeline.

However, no project schedule is set in stone. Unexpected events can occur, such as delays in obtaining resources or changes in workload estimates. Regular monitoring and updating of the schedule are essential to keep the project on track.

5.4 Budgeting

When you're planning the budget for a project, it's crucial to consider both direct and indirect costs. Direct costs are those directly attributable to the project's execution, like employee salaries, travel expenses, and the purchase or rental of equipment and machinery. On the other hand, indirect costs are more

general expenses that support the project indirectly, such as office space, utilities, and administrative supplies. (Project Management Institute, 2013)

Estimating project costs can be a complex task, often relying on a combination of expert opinions, historical data from similar projects, and competitive bidding processes. These methods help provide a range of estimates, considering the uncertainties inherent in any project. (Project Management Institute, 2013)

Initial cost estimates, made during the project's early stages, serve as a guide for financial planning and decision-making. While these estimates may not be precise, they offer a basis for assessing the project's feasibility and securing necessary funding. As the project progresses and more detailed information becomes available, cost estimates can be refined and adjusted. (Project Management Institute, 2013)

To enhance the accuracy of cost estimates, project decomposition is a valuable technique. Breaking down the project into smaller, manageable components allows for a more detailed assessment of costs, making it easier to allocate resources effectively. (Project Management Institute, 2013)

However, it's important to recognize that uncertainties and unexpected events can impact project costs. Factors like changes in project scope, unforeseen work requirements, external disruptions (such as legal changes or adverse weather conditions), and errors in estimation can all affect the project's financial outlook. (Project Management Institute, 2013)

To mitigate these risks, it's prudent to include a contingency reserve in the project budget. This reserve acts as a buffer, providing funds to address unforeseen expenses and variations in project scope. By incorporating a contingency reserve, project managers can better manage uncertainties and maintain financial stability throughout the project lifecycle. (Project Management Institute, 2013)

Overall, careful planning, accurate estimation, and proactive risk management are essential for effectively managing project costs and ensuring the project's success within budgetary constraints. (Project Management Institute, 2013)

5.5 Communication

Effective communication is the lifeblood of any successful project, and the project manager serves as its conductor, orchestrating the flow of information between various parties involved. Communication isn't just about transmitting messages; it's about ensuring that information is understood, acted upon, and integrated into the project's decision-making process. (Project Management Institute, 2013)

Messages can easily become distorted or misunderstood as they travel through different channels and individuals. Therefore, it's paramount to articulate messages clearly, ensuring that the core message remains intact and easily comprehensible. This involves not only careful crafting of messages but also meticulous review and consideration of how they will be perceived by recipients. (Project Management Institute, 2013)

Moreover, communication planning is essential. This involves not only deciding what information needs to be communicated but also determining the most effective channels and methods for dissemination. Internal communication within the project team is as crucial as external communication with stakeholders, clients, or other relevant parties. (Project Management Institute, 2013)

Meetings serve as a cornerstone of project communication, providing a forum for collaboration, decision-making, and information exchange. However, the effectiveness of meetings hinges on proper planning and execution. A well-structured meeting with a clear agenda, pre-defined objectives, relevant attendees, and a designated timeframe ensures that communication is focused, productive, and conducive to achieving project goals. (Project Management Institute, 2013)

In essence, effective communication is not just about sending messages; it's about fostering understanding, collaboration, and alignment among all project stakeholders. By prioritizing clear, transparent communication and implementing robust communication strategies, project managers can significantly enhance the likelihood of project success. (Project Management Institute, 2013)

5.6 Change management

As the project progresses, there may arise a need for adjustments or modifications due to various factors like evolving requirements, and unforeseen challenges in the implementation process. (Project Management Institute, 2013)

When considering changes within the project, it's essential to assess whether they will positively or negatively impact key aspects like project timeline, budget, and the final product's quality. This evaluation helps make informed decisions about whether a proposed change is necessary to achieve project objectives or if it's more of a nice-to-have addition. (Project Management Institute, 2013)

Given the complexity of the project and its potential impact on various stakeholders, distinguishing between minor and major changes is crucial. Minor changes may include relatively simple adjustments that can be made without significantly affecting the project's overall trajectory, whereas major changes may require careful consideration and approval from higher management due to their potential implications on timelines, costs, or product specifications. (Project Management Institute, 2013)

In evaluating the effects of changes, it's essential to consider multiple criteria, including cost implications, alignment with regulatory requirements, potential disruptions to project schedules and resource allocations, and overall risks and opportunities associated with the proposed changes. This comprehensive assessment helps ensure that decisions regarding changes are well-informed

and aligned with the project's strategic objectives. (Project Management Institute, 2013)

Documenting all proposed changes and their associated details in a formal change management document is essential for maintaining transparency and accountability throughout the project lifecycle. This document serves as a centralized repository for tracking changes, documenting decision-making processes, and ensuring that stakeholders are kept informed about any adjustments made to the project scope or objectives. (Project Management Institute, 2013)

By implementing a robust change management process tailored to the specific needs and requirements of the Sampo-Rosenlew new plot combine harvester project, the project team can effectively navigate uncertainties, mitigate risks, and adapt to evolving circumstances while staying focused on delivering a high-quality product within the defined constraints and timelines. (Project Management Institute, 2013)

5.7 Risk Management

In the realm of project planning, it's vital to anticipate and prepare for potential risks and uncertainties that may arise throughout the project journey. Drawing insights from past experiences and common challenges encountered in similar projects serves as a valuable foundation for proactive risk management. While it's impossible to completely eliminate all risks, taking preemptive measures significantly reduces the likelihood of disruptions during project execution. (Project Management Institute, 2013)

Investing time in assessing risks proves to be a worthwhile endeavour, as it enables project managers to identify potential pitfalls and devise strategies to mitigate them effectively. This proactive approach to risk management

minimizes the probability of encountering major setbacks down the line, making it a prudent investment of resources. (Project Management Institute, 2013)

When it comes to risk management, incorporating buffers into project timelines or budgets adds an extra layer of protection against uncertainties. While time buffers are commonly utilized, it's also essential to consider allocating buffers for financial aspects and project objectives. However, it's crucial to justify the addition of buffers with valid reasons, as excessive risk management measures may inadvertently impede project flexibility and innovation. (Project Management Institute, 2013)

Identifying critical risk areas is paramount for effective risk management. These areas typically include aspects such as project timelines, adoption of new technologies, unresolved accountability issues, allocation of key resources, and organizational boundaries. By focusing attention on these critical areas, project managers can strategically allocate resources and implement mitigation strategies to address potential risks. (Project Management Institute, 2013)

Utilizing various checklists and tools can enhance risk management efforts. When evaluating project risks, factors such as project timelines, role clarity, financial considerations, resource availability, technological challenges, quality assurance, stakeholder engagement, and environmental factors should be taken into account. (Project Management Institute, 2013)

Risk assessment involves identifying, evaluating, and planning for risks by considering their potential impact, likelihood of occurrence, mitigation strategies, contingency plans, and responsible parties. Prioritizing risks based on their combined probability and impact ensures that the most critical risks are addressed first. Additionally, actionable and comparable risks facilitate the implementation of effective risk management strategies. (Project Management Institute, 2013)

It's essential to strike a balance between risk management and overall project management. While proactive risk management is crucial, project managers must avoid overly rigid practices that inhibit creativity and adaptability. By integrating risk management seamlessly into project planning and execution, teams can navigate uncertainties more effectively and achieve project success. (Project Management Institute, 2013)

5.8 Closing

In projects, there's always a clearly defined starting and ending point. A project is considered concluded when the tasks outlined in the project plan are completed and the deliverables are approved by the client. At the project's conclusion, the project manager compiles a final report, either independently or in collaboration with the project team, which is then presented as part of the project closure process. (Project Management Institute, 2013)

The final report aims to provide a concise overview of the project's background as needed, without delving into excessive detail akin to a comprehensive history. Its primary purpose is to serve as a knowledge resource that can inform the improvement of future project operations and management. The final report reflects the project team's perspectives on the project's success and includes elements such as a financial assessment, an evaluation of timeline adherence, a general project overview, the project team's assessment of project success, an appraisal of the deliverables, and recommendations for improvement in subsequent projects. (Project Management Institute, 2013)

6 PROJECT METHOD IN PLOT PROJECT

Our project operates within a framework reminiscent of the Kanban model, which emphasizes visual workflow management, the imposition of work-in-progress limits, continuous improvement practices, and adaptive planning strategies. Drawing inspiration from the Kanban methodology, our project endeavors to cultivate an environment of heightened efficiency, seamless collaboration, and proactive responsiveness.

By integrating key principles of the Kanban framework into our project management approach, we aim to optimize resource utilization, minimize bottlenecks, and foster a culture of ongoing innovation and refinement. This alignment with Kanban principles equips our project team with the tools and strategies necessary to navigate dynamic challenges, capitalize on emerging opportunities, and ultimately achieve our project objectives with precision and effectiveness.

7 PROJECT TEAM IN THE PROJECT

As a member of our project team developing the new plot combine harvester, our group included:

- Our Project Manager, who led the project from start to finish, ensuring everyone stayed on track and goals were met.
- The Engineering Team, responsible for designing and bringing the harvester to life, overcoming technical challenges along the way.
- Our Manufacturing Team crafted each component and assembled the harvester with precision.
- The Quality Team, ensuring every aspect of the harvester met our high standards.
- Our Supply Chain and Procurement Team, sourcing materials and components to keep the project on schedule. They also buy every part that we are not making.

- Project coordinator handling communications behind the scenes. (This is my role)
- The Sales and Marketing team decide every detail like name, color and marketing plan.
- Various stakeholders, providing valuable input and feedback throughout the project.

8 COMMUNICATION IN THE PROJECT

Communication and stakeholder engagement are paramount in ensuring the success of our plot combine harvester project. As we navigate the complexities of developing and deploying this innovative agricultural machinery, effective communication serves as the linchpin for collaboration, alignment, and informed decision-making among all stakeholders involved.

Stakeholder engagement in our plot combine harvester project encompasses a diverse range of individuals and groups, including internal team members, external partners, agricultural experts, regulatory authorities, and end-users such as farmers and agricultural communities. Each stakeholder brings unique perspectives, interests, and expectations to the project, making their active involvement critical for its success.

Our communication plan for the plot combine, harvester project outlines clear objectives, channels, and protocols for disseminating information and soliciting feedback. Regular updates and progress reports keep stakeholders informed about project milestones, technical advancements, and potential challenges. We utilize a variety of communication channels, including meetings, presentations, email updates, and online platforms, to reach stakeholders effectively and accommodate diverse preferences.

Two-way communication is integral to our approach, allowing stakeholders to actively participate in discussions, provide input, and express their concerns.

We actively seek feedback from farmers, agricultural experts, and end-users to ensure that our plot combine harvester meets their needs and expectations. By fostering open dialogue and transparency, we aim to build trust and collaboration among all project stakeholders.

Inevitably, conflicts and disagreements may arise during our project. However, we are committed to resolving these issues through constructive dialogue, mediation, and compromise. Our goal is to address stakeholder concerns promptly and find mutually acceptable solutions that support the overall objectives of the plot combine harvester project.

As we progress with the development and implementation of the plot combine harvester, we remain adaptable and responsive to changing circumstances and stakeholder needs. Our communication and stakeholder engagement strategies evolve dynamically, ensuring that we remain aligned with project goals and objectives.

9 IMPLEMENTATION

As I have already said before, the implementation of the project is progressing step by step.

It is always worth putting time and effort into doing the planning and specification phase properly because experience according to the decisions of this phase greatly affects the final result. I've noticed now that I've followed the project from the sidelines in the role of coordinator, that the plans don't always hold, and for this reason, it's necessary to make sure that the planning phase is done carefully, also thinking about the risks.

The most important things in basic planning are the acquisition of the correct need definitions and initial data, as well as defining the functions and ensuring their correctness.

In the implementation, essential issues for each participant in the project are schedule and resource management, cost management, information management, management of changes and additions, quality control and assurance. To stay up to date, it is important to hold meetings systematically. In them, the situation of the project is reviewed throughout the day, compared to the plans, and repairs/changes are made if necessary. Our project has a meeting every Tuesday where we go over all the things done during the week.

9.1 Monitoring and controlling gateways

Monitoring and controlling tasks are slightly different depending on the phase. For example, in the engineering phase, we focus on parts, while in the plan section, we think about the budget, laws and all kinds of small tasks. But the basic functions of the sections are the same, and that's why I'll tell you roughly my steps like this. Below is what I do at any stage and what I consider important to control in the project.

9.1.1 Defining Key Performance Indicators (KPIs)

- Work together with the project team to figure out what's most important for the project to achieve.
- Turn those important things into easy-to-measure goals called KPIs.
- Come up with ways to measure how well we're doing with these goals.

9.1.2 Implementing Reporting Protocols

- Make a plan for how we're going to talk about our progress regularly.
- Decide how often we'll give updates, who needs to know, and how we'll tell them.
- Create simple forms or documents to record our progress and share it with everyone involved.

9.1.3 Tracking Progress Against Plans

- Keep an eye on our project timeline, goals, and tasks to see if we're on track.
- Meet regularly to discuss how things are going and if we're hitting our targets.
- Look at reports to see where we might be falling behind and figure out how to fix it.

9.1.4 Change Control and Scope Management

- Make a plan for handling any changes that come up during the project.
- Think about how changes might affect our goals, schedule, or budget.
- Talk to everyone involved before making any big changes to make sure it's the right move.

9.1.5 Adherence to Project Plans and Standards

- Make sure that everyone is following the plan we made for the project.
- Check that our work meets the standards we set at the beginning.
- Fix anything that's not going according to plan or isn't up to our standards.

9.1.6 Risk Management and Mitigation

- Look for anything that might go wrong during the project.
- Come up with ideas to stop bad things from happening or to make them less bad.

- Keep an eye out for any signs that things might be going wrong and fix them before they get worse.

9.1.7 Stakeholder Updates and Engagement

- Tell everyone involved how things are going with the project regularly.
- Ask for feedback from everyone to see if they're happy with how things are going.
- Get everyone involved in making decisions so we're all on the same page.

9.2 Tools

9.2.1 Gate Deliverables Assessment Sheet

In our project, we utilized the Gate Deliverables Assessment sheet as a structured tool for evaluating the completeness and quality of key project deliverables at each milestone.

This enabled me to ensure alignment with project objectives and stakeholder requirements, proactively address issues, and facilitate transparent decision-making during gate reviews. By documenting findings and recommendations, tracking progress, and capturing lessons learned, the assessment sheet enhanced project governance and contributed to overall project success.

This was a new style in the company, but a very successful way to control the project. The appendix 1, shows my Gate Deliverables Assessment sheet for the planning gateway.

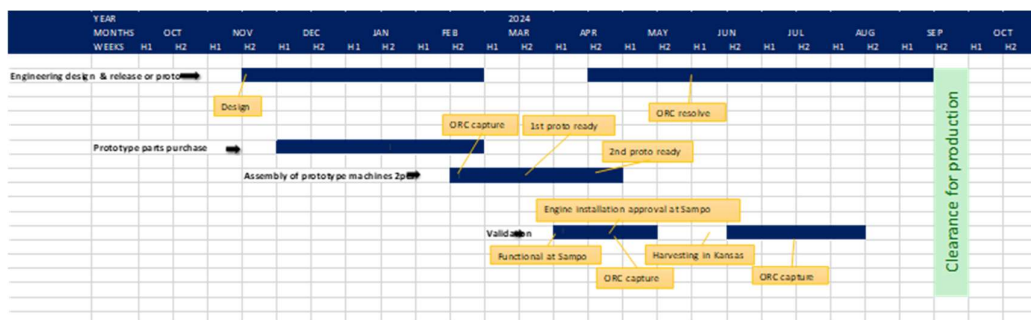
							Summary	
							Total no. of activities/deliverables	36
							No. of red activities/deliverables	0
							No. of green activities/deliverables	29
							No. of yellow activities/deliverables	7
							No. of NA activities/deliverables	5
S. No.	Gate Deliverables	Lead Responsibility	GIYR/NA Status	Observation	Action Plan	Target Date	Who	
1	Styling (Key deliverables)		G					
2	Target define and agree		G					
3	Business case		G					
4	WBS Code Released in System		G					
5	Preliminary eBOM prepared		G					
6	Make vs buy finalized		G					
7	Strategic supplier identified and are on board		G					
8	Market and competition analysis	Sales & marketing	G					
9	Product feature matrix	Sales & marketing	G					
10	Styling	Sales & marketing	G					
11	Preliminary priority assemblies identified based on long lead time		G					
12	Real world usage pattern (RWUP) based on various markets proposed (harvesting condition, type of crops, woods, frequency of machine operation etc)	Sales & marketing	G	Testing plans				
13	Substitution for fasteners, weights and sizes		NA					
14	Machine architecture, packaging studied & preliminary eBOM is prepared	Engineering	G					
15	Make vs buy for parts are confirmed	Engineering	NA					
16	Regulatory information studied and impact identified on product	Engineering	G					
17	List of consultants and partners finalized and contracts proposed	Engineering	G					
18	Preliminary validation plan prepared	Engineering	Y					
19	Business case inputs completed	Engineering	G					
20	Proposed potential suppliers for changed parts are reviewed	Purchasing	NA					
21	Strategic suppliers are on board	Purchasing	G					
22	Carryover parts supplier confirmed to be live	Purchasing	NA					
23	Investment assumption for tooling and material cost are checked and confirmed to be Okay	Purchasing	G					
24	Manufacturing location with clarity on inhouse scope approved	Manufacturing Engineering	G					
25	Factory investment estimated based on change content	Manufacturing Engineering	G					
26	Long lead facility identified and clearance given to go ahead	Manufacturing Engineering	G					

Appendix 1: Gate Deliverables Assessment sheet

9.2.2 Gantt Chart

The Gantt chart served as a visual roadmap, outlining key tasks, milestones, and timelines. This tool provided a clear overview of project progress, enabling effective scheduling, resource allocation, and task management.

This chart helped us to see where we should be at every point and are we on the schedule. The appendix 2, it's our Gantt chart and you can see that there is every point that our team should have made.



Appendix 2: Gantt chart

10 RESULT: PLOT COMBINE HARVESTER

The research and my part are done in the project. The planning and engineering part was succeeded. I received thanks from our CEO because I kept all the steps on track.

However, the fast progress of the project and the bursting of the budget must be taken into account. The project did not stay on schedule and is about half a year behind schedule, which affects the sale of combine harvesters, and it will only start to be sold in the season of 2025.

The project didn't stay on schedule due to strikes, new parts and our system crashes. However, it must be remembered that the project was done on a very short schedule, and it was to be assumed that the schedule would be extended.

In addition, effective project management played a decisive role in the success of our project. From setting clear goals and milestones to managing resources and schedules, we implemented solid project management practices that ensured the project stayed on schedule and within budget. Regular communication, milestone reviews and risk management strategies were integral to maintaining project momentum and overcoming obstacles along the way. In the future, this thesis can help companies to get project management under control.

11 CONCLUSION

Finally, I reflect on our thesis and project.

During the thesis process, I did an extensive literature review related to the projects. Most of my sources were books, which I got from my project manager.

Regarding my thesis, I feel that, despite the initial difficulties, we succeeded quite well in producing the text and finishing the research. My goal was to get deeper into project management and to achieve the project's goal. In addition, my information retrieval skills improved significantly during the process.

However, I faced challenges with the project schedule because there were difficulties in coordinating the schedules. This led to delays, which will be reflected in the sale of the new combine, the new combine should start to be produced next year. The thesis writing phase was particularly challenging because the topic was unknown and required extensive research, but it was interesting to me. In addition, I occasionally faced challenges with the IFS system as it crashed from time to time.

Looking back, there are several aspects of the project and thesis that we would do differently. A more precise and adhered-to schedule would have been useful. Although I produced the text well, I noticed that there were challenges in delineating the project and the thesis.

In a brief reflection on the Plot Combine harvester project:

All in all, we can be satisfied with the implementation of the project. However, there are aspects of this project that we would now approach differently. Projects of this scale require careful division of tasks among team members, clear documentation and communication. Scheduling too short was also a challenge.

12 FINAL WORDS

This thesis process started already in December 2023, at the turn when the head of the project suggested that I turn my work into a thesis, which went better than well for me because I have always been interested in coordination and projects. Sticking to the schedule was successful, as the research progressed at a steady pace.

When I met my thesis supervisor, I had already completed 2/3 of the work, which helped me finish the work quickly but together we were able to set myself more motivation.

In particular, the thought of graduating and getting into working life quickly gave me motivation for writing.

I feel that I have achieved my personal goals and managed to accumulate valuable lessons that will certainly benefit me in my future working life as well.

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