# Integration of Neurala Vision Inspection Automation

Executive Project Overview

10/12/2023

# Problem Statement

- Floyd Furniture faces critical manufacturing challenges due to a large inquiry from Wayfair for 5,000 furniture kits.
- Persistent issues with missing fasteners and subpar product surface quality necessitate an advanced quality control solution.
- Urgent need to ensure product integrity and scalability to meet Wayfair's demand.

# Project Proposal & Objective

- Integration of Neurala's AI system into Floyd's manufacturing quality assurance process.
- Initial focus on Floyd Shelving System and Floyd Round Table for AI-driven inspection.
- Aim: Guarantee quality of fastener kits and surface finishes via seamless integration into existing Salesforce-based system.

Objective :

- Strengthen Floyd Furniture's quality control with Neurala's AI for fastener kit and surface finish inspections.
- Goal: Fulfill Wayfair's order and attract future large-scale partnerships.

# Process & Product Deliverables

Process Deliverables:

1. Executive Project Overview
2. Quality Assurance Integration
3. Agile Sprints
4. Regular Meetings
5. Vendor Relationship Management

Product Deliverables:

1. Integrating the Neurala System
2. Testing of the products
3. Quality Enhancement
4. Streamlined Manufacturing
5. Cost Efficiency
6. Competitive Advantage

# Vision of the Project and Technology Outcomes

**Equipment & Software**

- Integration of Neurala VIA: Implementing AI-powered quality inspection in the manufacturing process.
- Installing Brain Builder and Inspector: Configuring and training Neurala's AI models for both product lines - round tables and shelves.
- Installing GigE Vision Cameras to add to each Kitting workstation and to view the product.
- Salesforce Integration: Building inspection into the order tracking and management process.
- Training the systems for round table and shelving for detecting anomalies.
- Notification after detecting anomalies

**Business Practices**

- Quality Assurance: Ensuring consistent product quality at scale.
- Real-time Quality Tracking: Empowering management to make quick adjustments.
- Streamlined Manufacturing: Reducing customer delays and enhancing satisfaction.
- Quality Reporting: Providing senior management with real-time quality data.

**Impact on Staff**

- Engineers can monitor in real-time the manufacturing output.
- Managers have a visual representation of quality and performance improvement.

**Customer Impact**

- Enhanced Quality: Customers can expect consistently high-quality furniture.
- Reduced Delays: Faster assembly and product use due to accurate fastener kits.
- Improved Satisfaction: Higher-quality finishes lead to improved customer satisfaction

**Strategic Advantages**

- Competitive Edge: Guaranteeing quality for Wayfair and other major distributors.
- Efficiency: Streamlined manufacturing processes and faster issue resolution.
- Scalability: Capability to integrate AI inspection for other product lines.
- Data-Driven Decision-Making: Real-time quality data empowers management.

# Scheduling Assumptions

1. **Vendor Collaboration**: There will be smooth communication and cooperative relationship between both parties involved in the project.
2. **Project Team Roles**: The project team may include additional members as needed, such as IT support personnel or quality assurance specialists.
3. **Training and Skill Development**: It is assumed that project team members will require training to use Neurala's Vision Inspection Automation (VIA) software effectively.
4. **Quality Assurance and Testing**: The assumption is that the testing and quality assurance process will identify and address any issues without significant delays.
5. **Stakeholder Involvement**: It is assumed that stakeholders, including senior leaders will be actively involved and available for regular meetings.
6. **Data Privacy Compliance**: It can be assumed that the project will ensure compliance with data privacy regulations, especially if customer data is involved.
7. **Project Approach:** The project is planned as a hybrid project with Agile sprints to allow for iterative development and testing. Agile sprints will be used when it is appropriate for specific project phases.
8. **Alignment with Floyd's Strategic Goals:** The project is assumed to align with Floyd's strategic competitiveness goals and will contribute to the company's growth and quality improvement.

# Constraints

1. **Vendor Contract Approval**: Delays in the contract negotiation and approval process may impact the project schedule.
2. **Resource Availability**: Constraints on the availability of key project team members could lead to delays in task completion and timelines.
3. **Agile Sprints**: The effectiveness and availability of Agile team members may be constrained, affecting the success of Agile Sprints.
4. **Training and Skill Development**: Delays or difficulties in the training process for project team members may impact the project schedule.
5. **Quality Assurance and Testing**: Constraints in the testing process or the identification of critical issues may lead to potential schedule adjustments.
6. **Stakeholder Involvement**: Limited availability or engagement of stakeholders may result in communication and decision-making challenges.
7. **Budget Approval**: Delays or limitations in budget approval may affect resource allocation and project milestones.
8. **Integration with Salesforce**: Technical constraints or complications in integrating with the Salesforce CRM system may lead to schedule delays.
9. **Regulatory and Legal Compliance**: Any regulatory or legal compliance constraints may require additional time and resources to address.

# Project Stages

1. Initiating or Define Phase
2. Planning
3. Executing
4. Monitor and Control
5. Closing

# Project Stages

# 1. Initiation/Define

The project initiating/define phase is the initial stage of the project, where the project manager recognizes the need for improvement in the kitting process within the automotive industry. Key activities in this phase include

# Project Stages - Initiation and Define Phase

- **Defining the Project's Main Goal and Creating the Vision (Project Overview Statement - POS):**
  a. Develop a Project Overview Statement (POS) to guide the project. In this case, the POS is to enhance the automotive part kitting process to meet increasing customer expectations for customization and reduce errors. This statement serves as a clear vision for the project.
- **Identifying Stakeholders:**
  a. Identify and list the key stakeholders involved in the kitting process enhancement project. This includes kitting operators, technology providers, the executive board, and any other relevant parties. Recognize the importance of their roles and involvement in the project's success.
- **Performing Initial Analysis of the Current State:**
  a. Conduct an initial analysis of the current state of the kitting process within the automotive industry. This analysis should encompass understanding the manual nature of the process, the minimal inspection being performed, and potential productivity issues as described in the project.
- **Authorization and Project Approval:**
  a. Obtain authorization and approval to begin the project from the relevant stakeholders or the executive board, as highlighted in the project. Ensure that the project aligns with the organization's strategic goals and objectives.
- **Project Team Formation:**
  a. Form the project team responsible for implementing Neurala VIA technology for part kitting. Identify key roles and responsibilities for team members, ensuring they possess the necessary skills and expertise to succeed in the project.
- **WBS Charter:**
  a. Develop a Work Breakdown Structure (WBS) charter specific to the automotive part kitting enhancement project. This charter should outline the project's scope, objectives, and major work components, aligning with the project's objectives.
- **Contract Drafting and Signing:**
  a. Draft and sign any necessary contracts or procurement documents related to the implementation of technology, especially if external technology providers or vendors are involved. Ensure all contractual aspects are in order, as described in the project.

# Project Stages

## 2. Planning

The project planning stage is crucial for ensuring the successful implementation of Neurala VIA technology for part kitting in the automotive industry. Key activities in this stage, tailored to the project, include.

# Project Stages - Planning

- **Comprehensive Project Scope Definition:**
  a. Define the scope of the project with precision, specifying the exact boundaries of implementing Neurala VIA technology for part kitting within the automotive manufacturing process. Determine which aspects of the kitting process will be covered, such as customization and error reduction, and articulate the expected outcomes in line with the project.
- **Project Budget Estimation:**
  a. Estimate the budget required for the project, taking into account the costs associated with acquiring and implementing the technology, allocating resources, and managing related expenses. Develop a detailed budget plan that emphasizes cost control to align with the project's objective.
- **Resource Planning:**
  a. Identify and plan the necessary resources for the project, including personnel with expertise in kitting, technology providers, required equipment, and suitable facilities. Ensure that the right resources are available and allocated appropriately in the context of the project.
- **Risk Management:**
  a. Perform a comprehensive risk assessment, tailored to the project, including:
    i. Identifying potential risks that could affect the project's success, such as errors in kitting or technology implementation challenges.
    ii. Conducting both qualitative and quantitative analyses of these risks to understand their probability and potential impact, especially regarding the productivity and efficiency of the kitting process.
    iii. Develop a risk response plan to proactively manage and mitigate identified risks, aligning with the project's goal of reducing errors in the kitting process.
- **Procurement Planning:**
  a. Develop a procurement plan that outlines how the required technology, equipment, or services will be acquired for the project. Specify the most suitable procurement methods, potential vendors, and contracts to ensure the acquisition process aligns with the project's objectives.
- **Stakeholder Planning:**
  a. Create a stakeholder engagement plan that identifies key stakeholders in the automotive manufacturing process, such as kitting operators, technology providers, and the executive board. Develop a communication plan to ensure transparent and effective communication with all stakeholders, considering the project's emphasis on reducing errors and improving efficiency in the kitting process.
- **Project Schedule Development:**
  a. Create a detailed project schedule that outlines the timeline for each aspect of implementing Neurala VIA technology in the kitting process. Include milestones and deadlines for various project activities, helping with project planning and tracking progress while aligning with the project's objectives.

# Project Stages

# 3. Execution

The project execution stage involves the practical implementation of Neurala VIA technology for part kitting in the automotive industry, taking into account the specific challenges and goals presented in the project. Key activities in this stage include.

# Project Stages - Execution

- **Resource Acquisition:**
  a. Acquire the necessary resources, including Neurala VIA technology, specialized equipment, and skilled personnel, as identified and planned during the project planning phase. Ensure that all required resources are available and ready for use, addressing the project's emphasis on enhancing the kitting process.
- **Team Management:**
  a. Manage and coordinate the project team, ensuring that team members fully understand their roles and responsibilities. Promote collaboration and teamwork among team members to achieve project objectives, especially in the context of reducing errors and improving efficiency in the kitting process.
- **Communication Management:**
  a. Implement the communication plan developed during the project planning phase to ensure that effective communication channels are established and information is shared among all stakeholders. Regularly update stakeholders on project progress, aligning with the project's goals of enhancing customization and reducing errors.
- **Risk Response Implementation:**
  a. Put the risk response plan into action, as identified in the project planning phase. Continuously monitor the project for potential risks, and if any arise, apply the pre-defined strategies to mitigate and manage these risks effectively, specifically focusing on reducing errors.
- **Procurement Execution:**
  a. Execute the procurement plan, which includes acquiring Neurala VIA technology, equipment, or services from selected vendors. Ensure that procurement activities are conducted in accordance with the plan, contracts are managed effectively, and deliveries are on schedule, as highlighted in the project.
- **Alignment with Project Scope:**
  a. Continuously ensure that the project's execution aligns with the defined project scope. This includes verifying that the technology implementation covers the intended aspects of the kitting process, such as customization, and that project outcomes meet the defined scope while minimizing errors.
- **Resource Coordination:**
  a. Coordinate all project resources and personnel to ensure optimal utilization and alignment with project objectives. Monitor resource allocation and resolve any resource-related issues as they arise, particularly to meet the project's goals of customization and error reduction.

# Project Stages

# 4. Monitor & Control

The project monitoring and control stage is essential for ensuring that the implementation of Neurala VIA technology for part kitting in the automotive industry aligns with the specific challenges and objectives presented in the project. Key activities in this stage include

# Project Stages - Monitor and Control

- **Tracking Real-Time Activities, Time, and Expenses:**
    a. Continuously monitor and track real-time project activities, time spent, and expenses incurred against the planned schedule and budget. Ensure that the project remains on course in terms of time and cost management while focusing on enhancing customization and reducing errors.
- **Perform Integrated Change Control:**
    a. Implement an integrated change control process to manage and evaluate requested changes to the project scope, schedule, or budget. Ensure that all changes align with project objectives and are approved through the proper channels, with a focus on customization and error reduction.
- **Validate/Control Scope:**
    a. Validate the project scope to ensure that it aligns with the defined scope and objectives, particularly in terms of customization and error reduction. Control scope to prevent scope creep or unauthorized changes to the project's deliverables while ensuring the kitting process meets customer expectations.
- **Control Schedule:**
    a. Continuously control the project schedule by tracking progress against the planned schedule. Make adjustments as necessary to keep the project on time, with a focus on customization and error reduction in the kitting process.
- **Quality Control:**
    a. Implement quality control measures to ensure that project deliverables meet the defined quality standards. Regularly assess and validate the quality of work to minimize defects or issues, especially in terms of error reduction.
- **Monitor Communication**:
    a. Monitor project communication to manage conflicts and ensure effective stakeholder engagement. Address conflicts proactively and maintain transparent and open communication channels with all stakeholders to enhance customization and reduce errors in the kitting process.
- **Monitor Risk:**
    a. Continuously monitor project risks to identify potential issues or changes in the risk landscape, focusing on customization and error reduction. Evaluate the effectiveness of the risk response plan and make adjustments as necessary to manage risks effectively.
- **Notification of Discrepancies from the Budget:**
    a. Notify stakeholders of any discrepancies or variations from the project budget, especially in terms of customization and error reduction. Provide clear and timely communication regarding financial aspects of the project to minimize errors and maximize customer satisfaction.
- **Initiate Corrective Measures:**
    a. Initiate corrective measures, if needed, to align the project with budget and scope targets, particularly in the context of customization and error reduction. This includes taking action to resolve discrepancies and get the project back on track to meet customer expectations.

# Project Stages

# 5. Closing

The project planning phase is a critical stage that outlines all necessary activities, resources, and actions required to achieve the project's goals. During this phase, the project manager works on the following key components.

# Project Stages - Closing

- **Formally Turn Project Over to the Customer:**
  - Formally hand over the project to the customer, which, in this case, may include the automotive manufacturing organization. Ensure that all project objectives, such as enhancing customization and reducing errors in the kitting process, have been successfully met. Confirm that the customer is satisfied with the project outcomes, focusing on meeting customer expectations.
- **Archive Documents:**
  - Archive all project documents, including project plans, reports, communication records, and any other relevant documentation. This ensures that project information is preserved for future reference and may be useful for ongoing improvements in the kitting process.
- **Conduct After Action Reviews:**
  - Conduct after-action reviews (AARs) or post-project reviews to evaluate the project's performance. Identify lessons learned, assess what went well, and identify areas that could be improved in future projects, with a focus on enhancing customization and reducing errors in the kitting process.
- **Celebrate:**
  - Celebrate the successful completion of the project with the project team, stakeholders, and any other relevant parties involved. Acknowledge and appreciate the efforts and contributions of everyone involved in the project, particularly in achieving the project's objectives.

# Quality Planning

1. **Define Quality Goals:**
- Outline the quality goals for integrating Neurala's AI visual inspection programme.
- Quality parameters for fastener kit accuracy, surface finish quality, and overall production quality should be specified.

1. **Participation of Stakeholders:**
- Key stakeholders should be involved, such as top leaders, professional and manufacturing workers, Neurala representatives, the Salesforce team, and investors.
- Collect and incorporate input and feedback on quality expectations into the project plan.

1. **Risk Evaluation:**
- Identify potential quality-related risks in the integration process, such as concerns with software compatibility or training gaps.
- To manage these risks, create mitigation measures and contingency plans.

1. **Risk Evaluation:**
- Establish defined quality standards and best practises for Neurala's AI system integration.
- Ensure that all project activities, from system configuration to testing, adhere to these standards.

# Quality Assurance

1. **Process Compliance:**
- Ensure that all project operations adhere to recognised quality standards and best practises in the industry.
- Conduct regular audits to ensure that quality methods and rules are followed.

1. **Validation and testing:**
- Thoroughly test Neurala's Vision Inspection Automation (VIA) software in a variety of settings to ensure its correctness and dependability.
- Conduct user acceptability testing to ensure that the software fulfils set quality standards.

1. **Ongoing Improvement:**
- Implement a framework for continuous improvement to identify areas for process optimisation.
- Collect input from end users and stakeholders on a regular basis to discover opportunities to improve software functionality and user experience..

# Quality Control

1. **Monitoring in Real Time:**
- Implement real-time performance and accuracy monitoring of the AI system.
- Use AI-based analytics tools to track and fix any deviations or anomalies as soon as possible.
1. **Root cause Analysis:**
- Conduct root cause analysis to determine the underlying causes of quality issues or system failures.
- Address the underlying reasons to avoid such problems in the future..
1. **Training and development:**
- Provide comprehensive training to end users and production personnel on the effective use of the AI visual inspection system.
- Prepare user manuals and training materials to facilitate smooth implementation and deployment.
1. **Agile Sprints:**
- Use Agile methodology with regular sprints to enable for iterative AI testing, enhancement, and adaption.
- Ensure that Agile sprints are aligned with the specific demands and objectives of the project.

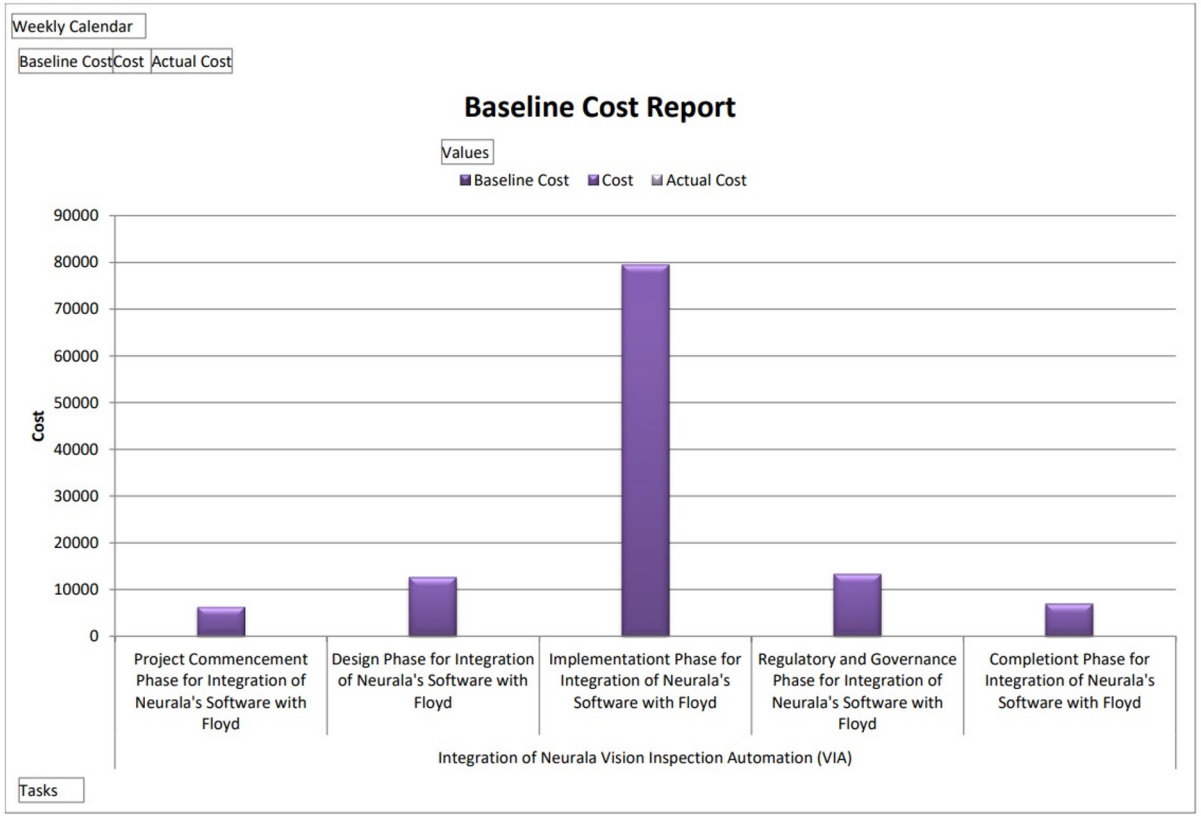
# Executive Involvement and Support

- **Josh Oswald - Project Sponsor:** Ensuring alignment of the project with Floyd's strategic competitiveness goals and providing resources and budgetary support as required.
- **Rachael Brown - VP of Marketing, Floyd Furniture**: Endorsement of the project's potential impact on marketing and customer satisfaction.
- **Ashley Bishay - Financial Controller, Floyd Furniture**: Oversight of financial aspects and cost management throughout the project.
- **Aurelia Johnson - Salesforce Technical Account Manager**: Technical expertise and guidance on integrating Neurala's AI system with the Salesforce platform.
- **Floyd's Senior Leadership Team**: Active participation in regular meetings, decision-making processes and alignment of departmental goals and resources with the project's objectives.
- **Neurala Team:** Assistance in addressing technical challenges and ensuring the successful deployment of the AI system.
- **Key Investors from Floyd's Board of Directors**: Understanding and endorsement of the project's impact on Floyd's growth and profitability.
- **Manufacturing and Operations Teams**:Active engagement in the project and providing insights and feedback on the integration's effectiveness and areas for improvement.
- **Sales and Marketing Teams**: Collaboration on the communication and marketing of the project's benefits to customers and partners.
- **Legal and Compliance Departments**: Ensuring that the project complies with all legal and regulatory requirements. Review and approval of any contracts or agreements related to the project.
- **Shrey Sheth - Project Manager**:Oversee the project and ensure that it aligns with the organization's strategic goals, and provide regular updates to the executive team.

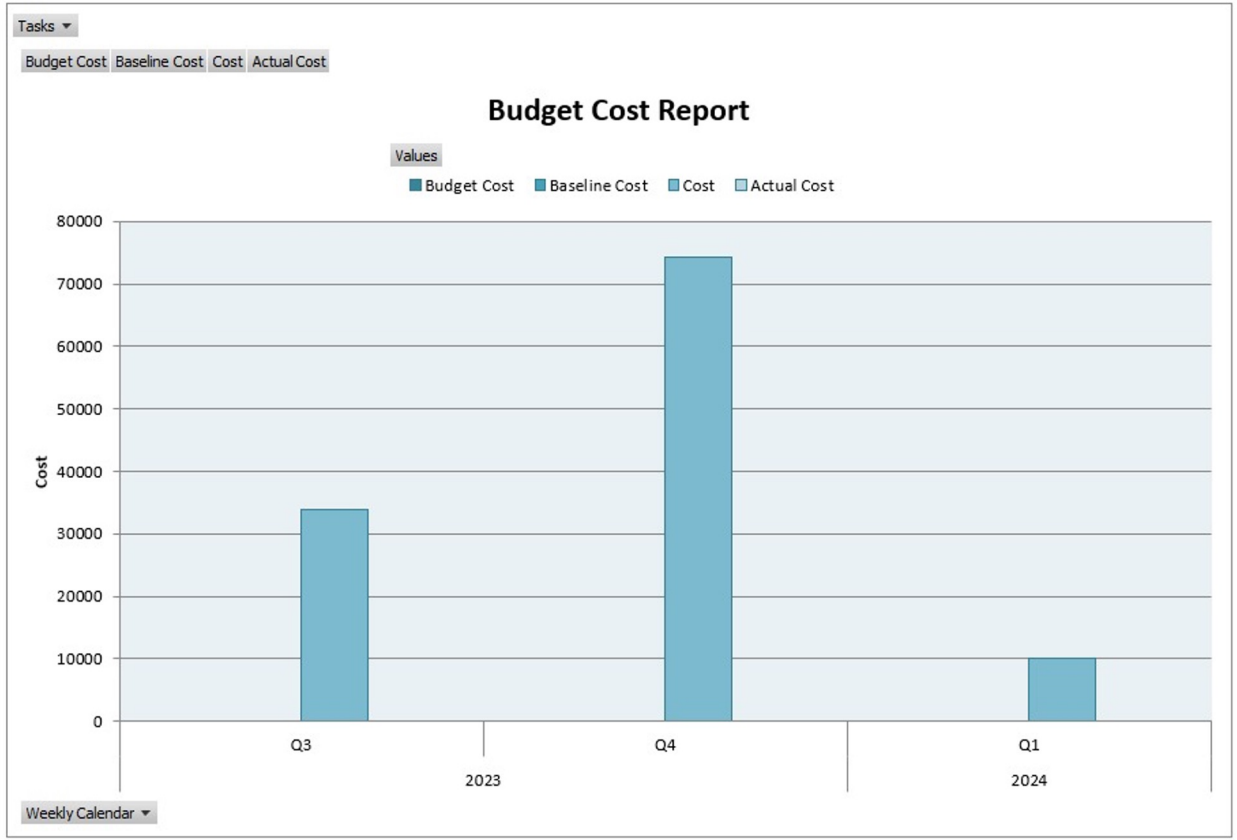
# Responsibility Matrix

| Title | Customer Experience Team | Systems/ Software Developer | Product Designer and Engineer | Account Executive | Client Operations | Project Manager |
|---|---|---|---|---|---|---|
| Scope | | ✓ | ✓ | | ✓ | ✓ |
| WBS | | ✓ | ✓ | | | ✓ |
| Budget | | | | ✓ | ✓ | ✓ |
| Quality | ✓ | ✓ | ✓ | | ✓ | ✓ |
| Change Management | | ✓ | ✓ | | ✓ | ✓ |
| Change Approval | | | | ✓ | ✓ | ✓ |

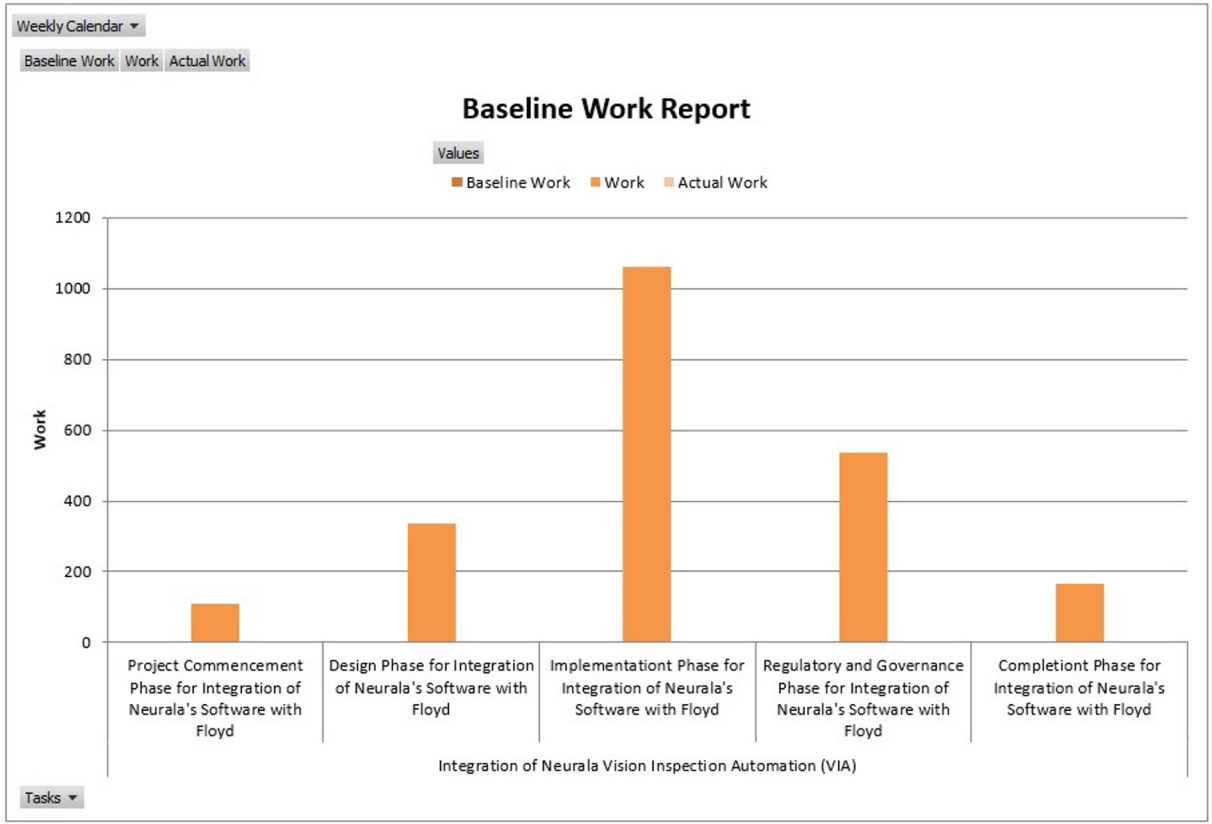
# Baseline Cost Report



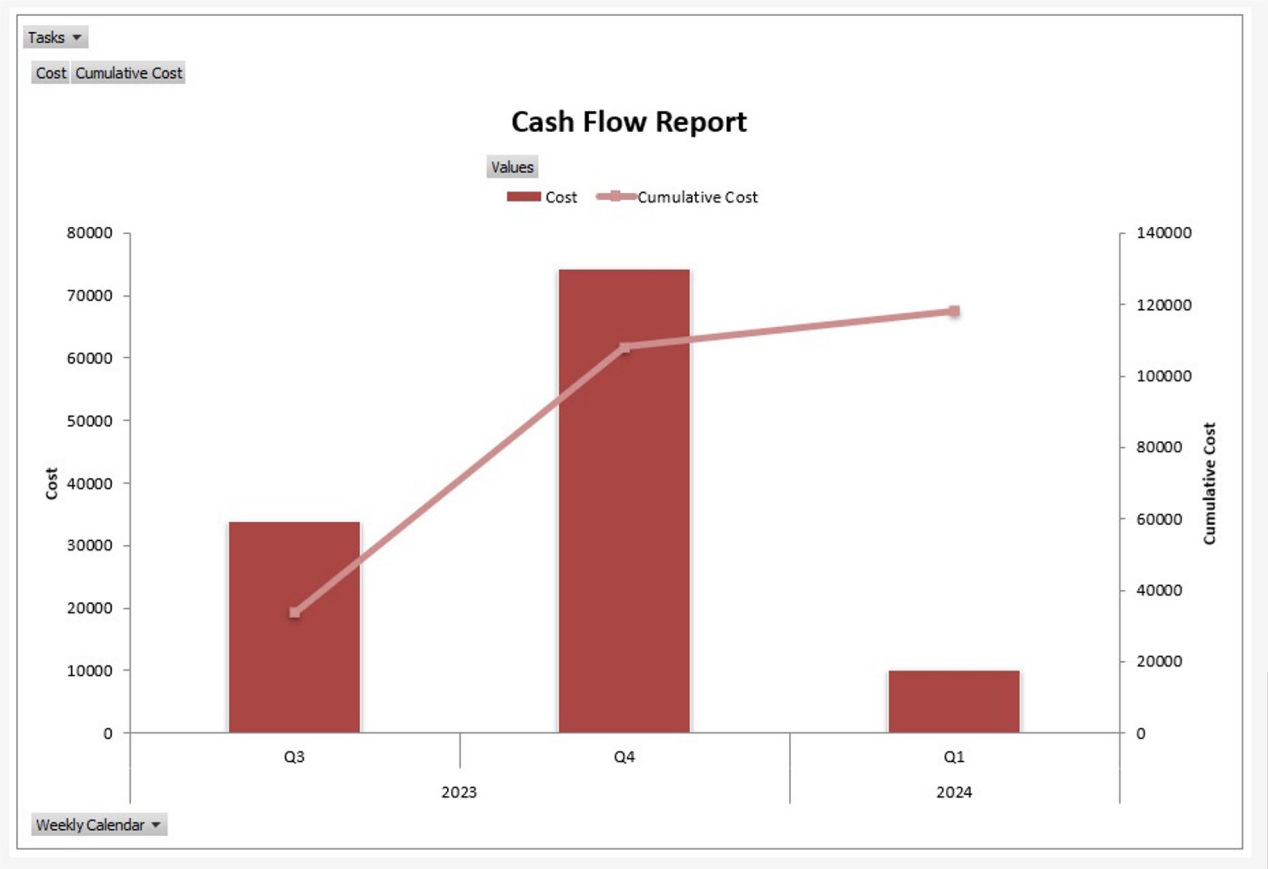
# Budget Cost Report



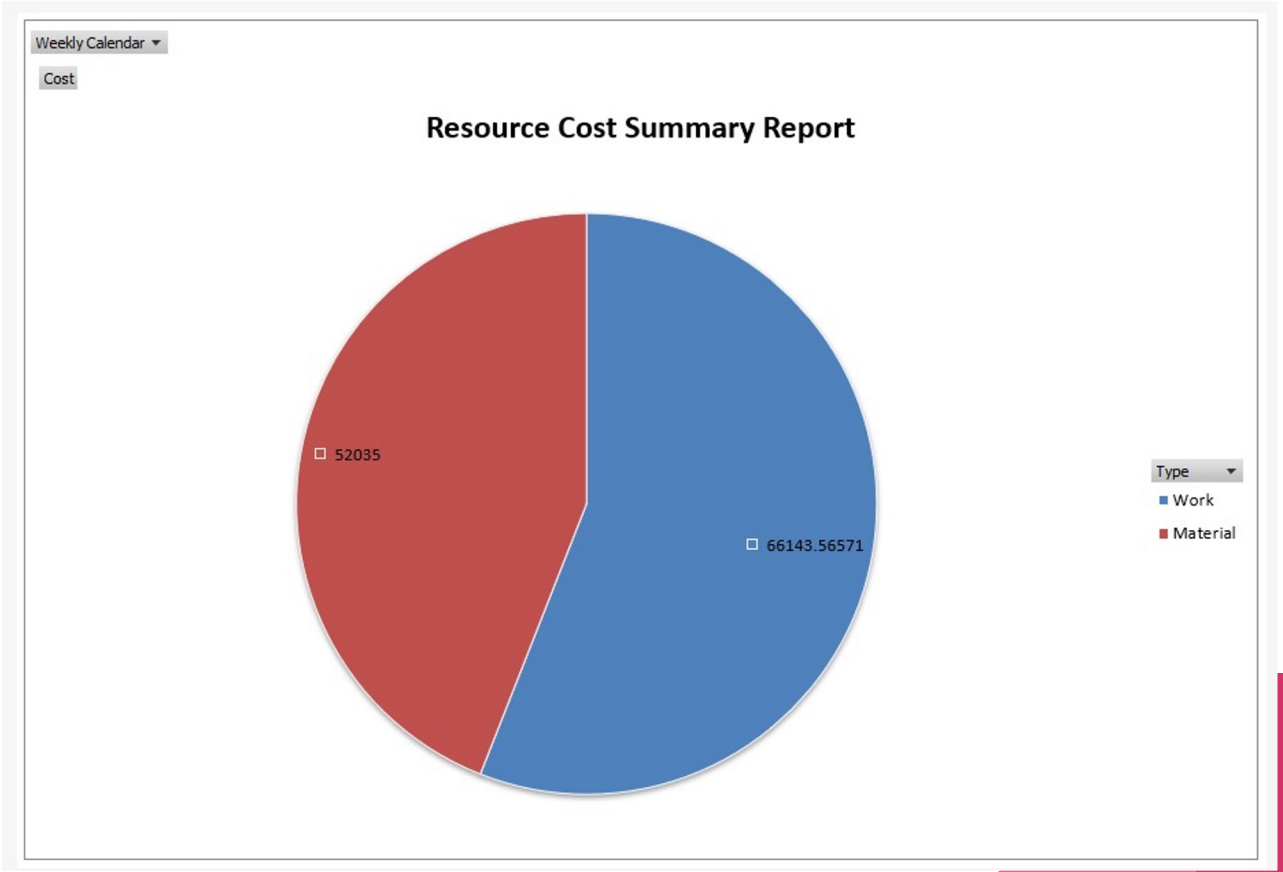
# Baseline Work Report



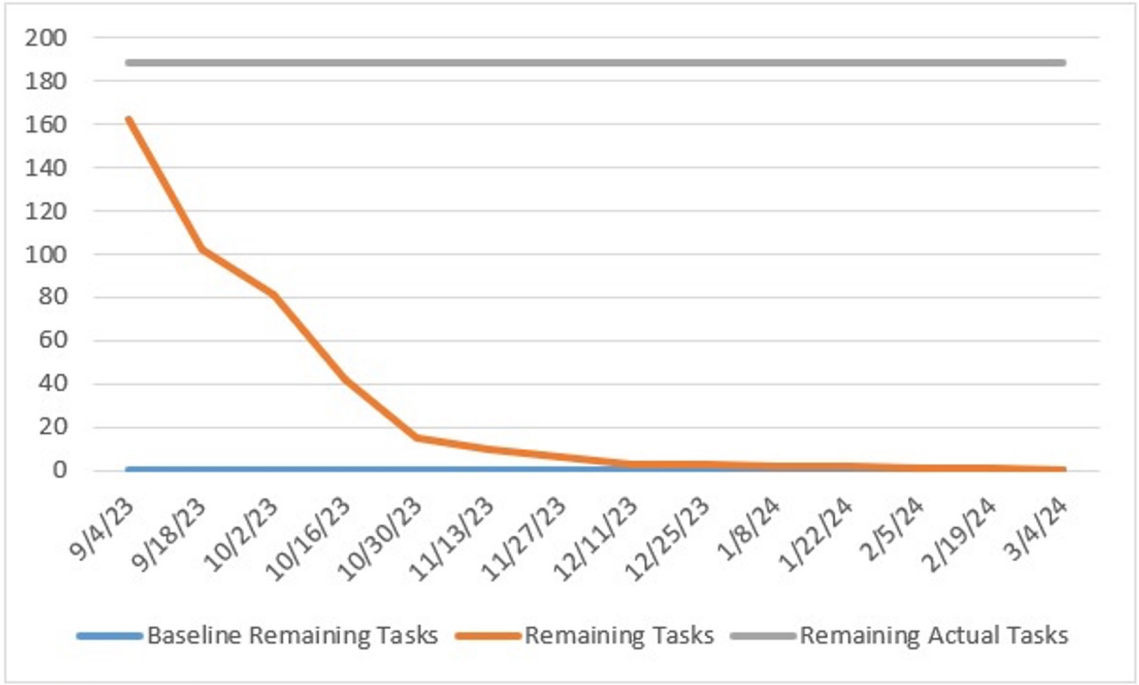
# Cash Flow Report



# Resource Cost Summary Report



# Task Burndown Chart




TASK BURNDOWN

Shows how many tasks you have completed and how many you have left. If the remaining tasks line is steeper, then your project may be late.

# Thank you

Questions?