**FLOYD**

**AI INTEGRATION**

**PROJECT CHARTER**

Submitted By:

Hardik Lilani

Rutwik Ghag

Puneet Shetty

Samagyee Pandey

**Project Charter**: Revision 09/25/2022

**Project Name**: AI Integration

**Project Background and Overview:**

* Floyd Furniture is an internet-based furniture company that creates thoughtful products to adapt to the modern times. They also ship their furniture in parts so that the customers can assemble it themselves playing on the psyche of assigning it more value owing to their hard work too. They recently received a huge single order from Wayfair for 5,000 units, which is a trial order. Satisfying Wayfair could result in more orders, much larger than the trial orders. This is pushing Floyd Furniture to upscale their manufacturing process, but they are concerned about quality control as they have been receiving complaints about undersupplying fasteners in the assembly kits and surfaces having scratches or the quality not being satisfactory. The Business Operations Manager at Floyd Furniture recommended that the company investigate Neurala, a company that develops an AI based visual inspection system for quality assurance that could solve the problems that Floyd Furniture were having. Neurala turned out to be a perfect match that could be integrated into the manufacturing process at Floyd Furniture and would guarantee quality in every area the company were lacking. After a few meetings and proposals, a deal was closed, and Floyd Furniture are now looking to build their system into the order tracking/managing process to allow senior management to track the level of quality across the board and solve issues much quicker.

**Project Business Case**

* Successfully integrating the AI Visual Inspection software as a part of Quality Assurance would mean that the products are guaranteed to meet expectations and those that don’t, can be taken care of promptly. This would lead to customer satisfaction from Wayfair and result in more large orders that drive in more profits for the company and help Floyd Furniture upscale and take on and serve other clients who place large orders. The company would grow and thrive in the marketplace as there would be increased satisfaction for the average customer too, leading to attaining a larger market share and increased sales. It leads to increased inflow of cash to spend on marketing and expanding into different avenues.

**Organizational Context**

This project is intended to integrate Neurala’s AI system into Floyd manufacturing quality assurance process to make margin of error negligible and streamline the production system.

**Sponsor: Rachel Brown**

**Project Manager:**

Hardik Lilani

**Stakeholders:**

Rachel Brown: VP of Marketing, Floyd

Josh Oswald: Business Operations Manager, Floyd

Sarah Broadwater: Customer Experience Team Lead, Floyd

Nithin Vajendla: Systems Developer, Floyd

Jennifer Hui: Digital Product Designer, Floyd

Barbara Watkins: Account Executive, Neurala

Daniel Glasser: VP of Client Operations, Neurala

Jeffrey Fagan: Lead Product Designer, Neurala

Hardik Lilani: Project Manager, Floyd

Rutwik Ghag: Business Consultant, Floyd

Puneet Shetty: Business Analyst, Floyd

Samragyee Pandey: Technology Consultant, Floyd

**Product deliverables:**

* Work Breakdown Structure: - A project deliverable that will organize the team’s work into manageable sections. It will give us a schedule to work with.

**Process Deliverables:**

* Project Charter- A short straightforward document that serves as a foundation for integrating the AI system developed by Neurala into the manufacturing quality assurance process at Floyd. Will include project number, names of team members, product deliverables, time and cost constraints etc.

**Project time and Cost constraints**

* The time constraints in this project are relative at this moment as the exact times are not stated in the document. The integration of the Neurala AI visual inspection system into the manufacturing quality assurance process at Floyd Furniture needs to take place in time to manufacture the 5,000 units for Wayfair in order to secure future deals with them.

**Other organizations involved**

* Neurala, whose AI visual inspection system we want to integrate into Floyd Furniture’s quality assurance system
* Wayfair, who has signed a contract for getting 5000 units from Floyd Furniture

**Assumptions**

* Integration into the system will be perfect
* Floyd Furniture will receive more large orders from major global distributors

**Out of scope:**

* Hold regular meetings with the team
* Communicate with the senior management

**General Project Sequence**

* Identification of the Project Task: Deliver 5000 units of various Floyd furniture kits to Wayfair. Initial Trial purchase phase of 6 months and additional orders thereon as officially agreed upon. It will be in collaboration with Nerula, which is a service provider organization that shall be using its Vision Inspection process to determine anomalies and variations.
* Product Features: Furniture units built using Nerula’s Inspection Process shall help in an effortless and effective production of furniture kits which would include a quality assurance process in the furniture built. Orders shall be made in line with the tracking process at each step which has been defined in the Salesforce platform. It shall begin with the inspection of the furniture which has been brought to manufacture and will end in the final manufacturing steps.
* Requirements:

1. Integrating Nerula’s AI system into Floyd’s System and checking whether the systems are compliant with each other to begin the monitoring process must be addressed first and foremost.
2. Secondly, check whether the availability of the furniture units in the exact amount needed to deliver to Wayfair is enough or not. Thirdly, checking the cost requirements of the whole project including the purchase of furniture and to cost of software used must be addressed.

* Testing: Initial trial run of the software itself must be done before the beginning of the project to avoid any errors if they might appear later. Various kinds of pieces of furniture can be used to test the same.
* Monitoring: Complete Cost analysis of the project shall be made which includes the cost for setup of the software, trials of the software, production of the furniture, Time is taken in each step during the process, and estimation of how many product deliverables shall be ready to be given to Wayfair shall be estimated by the team. Progress at each stage of the project shall be monitored and examined for its time and cost-effectiveness.
* Phases:

1. The first phase of the project would begin with the integration of Nerula’s systems into Floyd’s systems.
2. Secondly, the furniture brought down will be inspected through the lenses of Nerula’s AI systems which would collect images from its GigE Vision cameras and shall provide outputs over the network. Any suspectable areas of defect shall be monitored by the system which shall help in the rectification of the defects.
3. Regular meetings with the stakeholders at Wayfair, the project team, shall be conducted for approvals at every process. The team which is a part of the project shall be trained for their respective roles so that they can run, supervise, and rectify defects in the manufacturing process of the units before the final production begins for them.
4. Appropriate quality checks for the AI shall be monitored by the project team for any mechanical errors. The product manufactured shall be tested by the project management team which includes Nithin Vejendla who is the Systems Developer along with Jennifer Hui and Tiberius Fields who are Digital Product Designers and Product Engineers respectively.
5. After the complete check of all processes, Subsequently, the orders for the trial phase shall be delivered to the company Wayfair.

* Tracking: All production units shall be tracked using AI for their effective production and the number of units that are being produced. The efficiency of the system is of paramount importance as it shall determine the length of the project and the cost of the project. Nerula shall be using an area of the image to detect if there are any defects in the production and check whether all the components of the furniture assembled are in their right place and order.
* Reporting: All the work shall be reported directly to the \_\_\_\_\_\_\_project manager as well as to Josh Oswald, who is the Business Operations manager to examine the efficiency of the strategic system, the quality of the fastener kits, and lastly, the finish of the furniture parts.
* Delivery: After successful completion of all the parameters of the project, it shall be delivered to Wayfair to run its 6-month trial order and subsequent purchases thereon.

**Risk Analysis**

* Identification:

1. As the project starts its operation, the issue that Floyd company is facing is that there are manufacturing challenges coming towards the company as the proper quantity of fasteners is not enough in the kits provided to the customers which results in more assembling time for the customers consequently leading towards their dissatisfaction.
2. Also, as the production is scaling up, this would be a major issue and can result in a substantial part of project failure as it is directly leading to customer dissatisfaction and fewer sales thereon after the initial 6-month trial period.
3. Thirdly, there are issues in the look of the final product appearing to be of coarse quality and need to be addressed.

* Analysis:

1. During the assembling phase of the furniture, it must be properly checked by the AI whether the appropriate number of bolts is available or not. Any irregularity must be addressed for each item separately.
2. Secondly, after inspection, it has been found that the look of the product being coarse is because of a manufacturing defect in the units.

* Response planning:

1. Nerula’s AI systems are well within their capabilities and shall be checked by Jeffrey Fagan who is the Lead Product Designer to check for the defects of such orders, in the furniture’s assembling phase for checking of the bolts as well as the surface scratches with paints not appearing of smooth and high quality. It shall be undertaken by the Floyd Shelving System.
2. Also, checking the system’s software for any issues with the system also needs to be addressed as it must work and go on in the right manner without any shutdowns interrupting the manufacturing to the resulting process. This issue shall be undertaken by the Floyd Round Table.

* Documentation: Before and after the production of the units, a check for the AI, assemble check as well as quality check shall be documented to understand if there are any errors in the same for their timely rectification.
* Monitoring: The AI system shall be regularly monitored by Ben Cooper who is the Software Engineer for the optimum working of the systems. This shall also be reported to Josh Oswald, who is the Business Operations Manager at Floyd.

**Project Forms:**

* Change request form
* Project approval Form
* Change approval Form

**Meetings to be held:**

* Bi-weekly meetings of team to discuss on the problems and update on the deliverables.
* Monthy Meetings with stakeholders to update on deliverables and discuss future prospects

**Change Control Procedures:**

* Change request form to be filled by team members with specific details of the change, how to implement the change, deadline of implementation and outcome of the change. This form is to be submitted to Project Manager.
* Project Manger has to review the details of the change , fill in the change request form accordingly and fill in the change approval form. This form is to be submitted to head of IT department.
* Final Approval from Business operations Manager and Head of IT department.

**Approval of this Charter:**

Rachael Brown: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Josh Oswald: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Sarah Broadwater: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Daniel Glasser: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Hardik Lilani, Project Manager: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_