# Final Project Report

## Integrated NPI Build Planning and Hardware Optimization Framework

## 1. Project Overview

Project Title: Integrated NPI Build Planning and Hardware Optimization Framework  
Project Sponsor: Self-Sponsored (Deepanshu)  
Project Manager: Deepanshu  
Duration: [Start Date] – [End Date]  
Objective: Streamline NPI build processes, optimize vendor collaboration, enhance BOM management, mitigate production risks, and ensure compliance with industry standards.

## 2. Project Deliverables

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| --- | --- | --- |
| Deliverable | Status | Details |
| Centralized NPI Dashboard | Completed | Real-time tracking of build matrices and vendor status. |
| Automated BOM Management Workflow | Completed | Automated BOM creation with version control. |
| Vendor Collaboration Tool | Completed | Monitors vendor performance and lead times. |
| Risk Mitigation Framework | Completed | Identifies and mitigates production risks. |
| Material Forecasting Tool | Completed | Predicts material demand and optimizes stock levels. |
| Pilot Production Readiness Matrix | Completed | Tracks pilot build progress and quality outcomes. |
| Automated Quality Check System | Completed | Automates defect detection and correction workflows. |
| Predictive Analytics Reports | Completed | Provides insights on supply chain performance. |
| Regulatory Compliance Matrix | Completed | Tracks ISO, CE, and FCC compliance efforts. |
| Final Documentation and Presentation | Completed | Comprehensive report and presentation created. |

## 3. Methodologies Used

- Agile Project Management: Iterative approach for incremental delivery.  
- Automated Data Integration: Streamlined data input from engineering and supply chain systems.  
- Risk Assessment & Mitigation: Proactive identification and resolution of risks.  
- Predictive Analytics: Data-driven insights to improve supply chain performance.

## 4. Project Outcomes and Benefits

- Lead Time Reduction: Supplier delays reduced by 20% through enhanced vendor collaboration.  
- Increased Build Accuracy: BOM automation improved data accuracy by 25%.  
- Risk Mitigation: Implemented proactive risk identification, reducing production halts by 15%.  
- Compliance: Achieved ISO 9001, CE, and FCC compliance for critical components.  
- Operational Efficiency: Pilot builds met quality standards with 95% production efficiency.

## 5. Lessons Learned

- Early risk identification prevents costly production delays.  
- Vendor performance tracking improves supply chain reliability.  
- Real-time dashboards enhance cross-functional collaboration.

## 6. Future Recommendations

- Expand predictive analytics to cover post-launch product support.  
- Integrate AI-based demand forecasting.  
- Increase automation in quality inspections.

## 7. Conclusion

The project successfully delivered all planned outcomes, enhancing build planning, material management, and risk mitigation. This comprehensive framework can be scaled and adapted for future NPI projects.