**Feasibility Study –** Integrated NPI Build Optimization Framework for Hardware Development

By

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**Name of Project:**

Integrated NPI Build Optimization Framework for Hardware Development

**1. Executive Summary**

The feasibility study evaluates the technical, financial, and operational viability of developing an Integrated NPI Build Optimization Framework. This project aims to address inefficiencies in New Product Introduction (NPI) processes, reduce delays, improve BOM accuracy, and enhance risk management, ensuring better project delivery outcomes.

**2. Technical Feasibility**

**Objective:** Assess the availability and suitability of tools, technologies, and skills required to execute the project.

* **Available Tools:**
  + **Microsoft Excel:** For initial build matrices and tracking workflows.
  + **Power BI/Tableau:** For advanced data visualization and interactive dashboards.
  + **Python/R (Optional):** For predictive analytics in risk management (if needed).
* **Technical Expertise:**
  + The project team has expertise in supply chain processes, BOM structuring, and NPI workflows.
  + Additional data analytics expertise can be acquired through training or external consultation.
* **Assessment:**
  + The project is technically feasible using existing tools and basic expertise.
  + No need for additional infrastructure, reducing implementation complexity.

**Conclusion:** **Highly Feasible.** The tools and skills required are accessible, and the system can be developed using existing resources.

**3. Financial Feasibility**

**Objective:** Analyze the costs of the project compared to its expected benefits.

* **Estimated Costs:**

|  |  |
| --- | --- |
| **Category** | **Estimated Cost** |
| Software Tools | Minimal (Excel, Power BI available). |
| Resource Allocation (6 months) | Moderate, based on personnel time and effort. |
| Training/Consultation | Low (~$1,000 if needed for advanced analytics). |

* **Expected Benefits:**
  + **Cost Savings:** Reduction in supply chain delays and operational inefficiencies could save up to 20% in operational costs annually.
  + **Improved Delivery Efficiency:** Faster time-to-market for products ensures better market competitiveness.
* **ROI (Return on Investment):**
  + Initial investment is low compared to the long-term operational savings and process improvements.

**Conclusion:** **Economically Feasible.** The project offers a strong return on investment with minimal upfront costs.

**4. Operational Feasibility**

**Objective:** Evaluate the project's alignment with operational goals and assess resource availability.

* **Alignment with Organizational Goals:**
  + The project aligns with goals to improve time-to-market, reduce delays, and optimize supply chain processes.
* **Resource Availability:**
  + **Personnel:** Project manager, data analyst, supply chain expert, and dashboard developer are available internally.
  + **Data:** Sample datasets for material forecasting, BOM structuring, and risk analysis will be simulated to ensure the project's progress.
* **Potential Challenges:**
  + Stakeholder engagement may require regular reviews to ensure alignment.
  + Limited data accuracy due to reliance on simulated datasets may restrict real-world applicability.

**Conclusion:** **Operationally Feasible.** Resources are available, and the project aligns closely with organizational objectives.

**5. Risk Analysis**

* **Technical Risks:**
  + Limited expertise in advanced analytics might delay development (Mitigation: Basic workflows will be used initially).
* **Financial Risks:**
  + Minor cost overruns if external consultation is required (Mitigation: Monitor costs closely and use free resources wherever possible).
* **Operational Risks:**
  + Stakeholder misalignment or lack of engagement (Mitigation: Schedule regular reviews and feedback sessions).

**6. Overall Feasibility**

| **Aspect** | **Feasibility** | **Justification** |
| --- | --- | --- |
| **Technical Feasibility** | Highly Feasible | Existing tools (Excel, Power BI) and internal expertise make the project achievable. |
| **Financial Feasibility** | Economically Feasible | Low initial investment with significant cost-saving potential and high ROI. |
| **Operational Feasibility** | Operationally Feasible | Aligns with organizational goals, and resources are available internally. |

**7. Conclusion**

The Integrated NPI Build Optimization Framework is highly feasible from a technical, financial, and operational perspective. By leveraging existing resources, minimal investment, and a skilled team, the project can deliver significant benefits in terms of efficiency, cost savings, and improved delivery timelines. The organization should proceed with project initiation and resource allocation.