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Project Title: Washing Machine Elimination

Trigger of the project:

The project was conceived at the Management level of the organization. It involved the collaboration between suppliers and manufacturers to improve the efficiency of the engine assembly process by reducing the number of parts that required washing.

Uniqueness of the project:

- This Project introduced a new concept and application-wise approach to enhance the manufacturing process.
- It aimed to eliminate the need for washing parts by addressing the root causes of contamination and implementing structural changes in the manufacturing equipment and packaging.
- This project showcased the benefits of collaboration between suppliers and manufacturers in improving efficiency and quality.

Washing machine Identity	Date of commencement	Target Date	Date of completion
Washing Machine 1	August 2022	December 2022	December 2022
Washing Machine 2	August 2022	April 2023	April 2023

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Major milestones of project accomplishment

- Identification of parts requiring washing and determining the reasons for washing. Collaborating with suppliers to develop structural changes in the manufacturing process to reduce contamination and eliminate the need for washing.
- Modifying manufacturing equipment at the supplier's end and implementing new cleaning processes.
- Developing new packaging materials and redesigning packaging to minimize the risk of contamination and damage during shipping.
- Successful elimination of the need for washing 33 parts, resulting in cost savings and improved efficiency in the Engine Assembly process.
- Demonstration of the benefits of collaboration between suppliers and manufacturers in enhancing efficiency and quality in the manufacturing process.

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Tangible benefits

Sr No	Intangible Benefits	Tangible Benefits	Saving (In UOM)	Saving (INR Lakhs/year)
1	Reducing Global warming	Power cost saving	91182 kwh/year	8.26
2	Air, water, soil contamination	Coolant Saving	1720 ltrs/year	2.12
3	Water Conservation	Water Saving	17200 ltrs/year	.068
4	Reducing Global warming	Air cost Saving	25468 kwh/year	2.28

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Intangible Benefits

People/Society Benefits:

- Improved efficiency in the engine assembly process reduces production time and increases productivity, leading to potential cost savings.
- Eliminating the need for washing parts reduces water and energy consumption, promoting environmental sustainability.
- Higher quality parts result in a lower risk of defects and rework, ensuring better performance and customer satisfaction. Collaboration between suppliers and manufacturers fosters stronger relationships and enhances the overall supply chain efficiency.
- The project sets an example for other industries to explore similar initiatives, promoting sustainable manufacturing practices.

Moral/Motivation:

- The project instills a sense of pride and accomplishment among team members who successfully contribute to improving the manufacturing process.
- Working towards reducing environmental impact and promoting sustainability serves as a motivating factor for employees, aligning with their personal values.
- The collaboration between suppliers and manufacturers promotes a shared sense of purpose and motivates individuals to work together towards a common goal.

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Intangible Benefits

Skill Upgradation:

- The project offers opportunities for employees to develop new skills and knowledge related to process improvement, quality control, and collaboration with suppliers.
- Employees gain expertise in identifying and addressing root causes of contamination, implementing structural changes, and developing new cleaning processes.
- The experience of working on a cross-functional project enhances problem-solving skills, teamwork, and project management capabilities.

Attitude Shift/Development:

- The project fosters a culture of continuous improvement by encouraging employees to identify areas for enhancement and implement innovative solutions.
- The successful completion of the project reinforces the importance of collaboration, open communication, and a proactive attitude towards problem-solving.

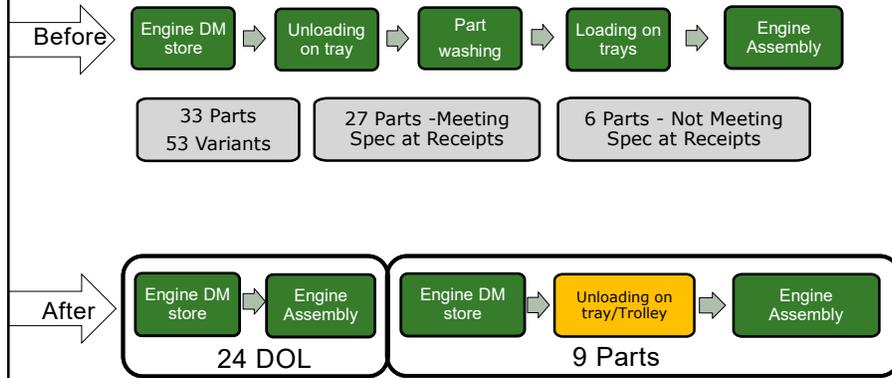
Others: The project contributes to the organization's reputation as a responsible and innovative company. The lessons learned from the project can be applied to other areas of the organization, leading to further process improvements and efficiency gains. The success of the project may inspire other organizations to undertake similar initiatives, contributing to industry-wide advancements in manufacturing efficiency and sustainability

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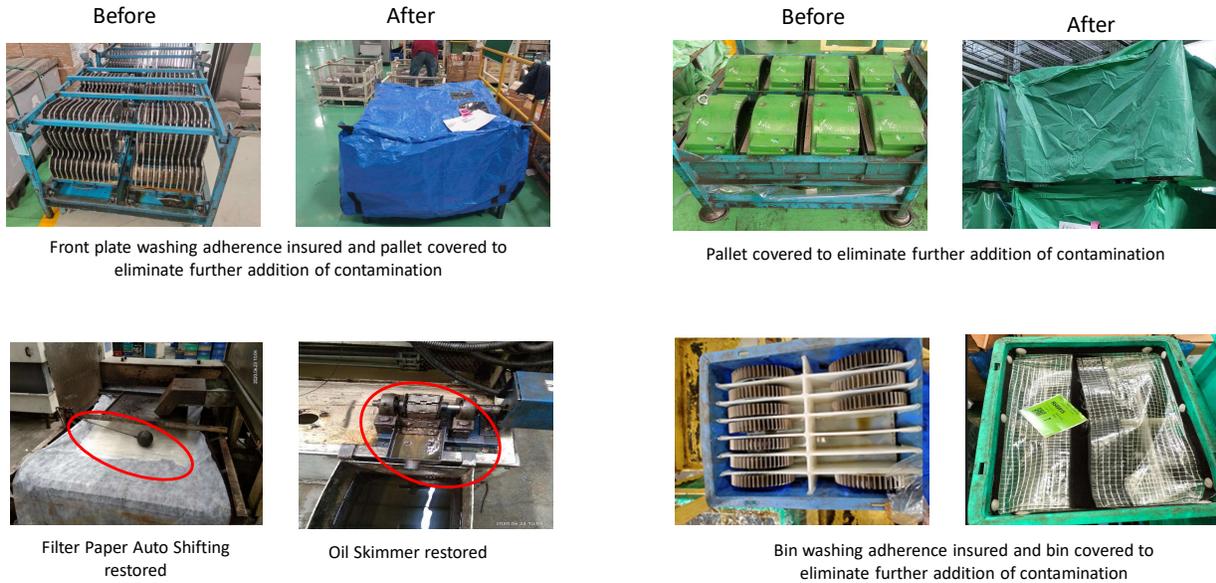
Process Comparison



Washing Machine picture for Reference

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Improvements at supplier's end



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Steps for spreading benefits of Washing Machine Elimination

- **Knowledge sharing and case studies:** Documenting the project as a case study, highlighting the challenges faced, strategies employed, and the resulting benefits. Share this knowledge internally within the organization and externally with industry associations, conferences, and forums to inspire and educate others on the potential of similar initiatives.
- **Training and workshops:** Conducting training programs and workshops to educate employees and stakeholders on the concepts, methodologies, and outcomes of the Washing Machine Elimination Project. Provide guidance on implementing similar projects in their respective areas of work, emphasizing the benefits and techniques for reducing contamination, improving packaging, and enhancing quality.
- **Continuous improvement initiatives:** Encourage a culture of continuous improvement within the organization by regularly evaluating and refining the implemented changes. Foster innovation by encouraging employees to come up with new ideas and solutions to further improve efficiency, reduce waste, and enhance sustainability.
- **Supplier engagement:** Extend the collaboration with suppliers beyond the project to continuously improve processes and materials. Foster long-term partnerships focused on sustainability, quality improvement, and efficiency gains. Share the success stories and benefits achieved to motivate other suppliers to adopt similar practices.

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Challenges faced in countering Washing Machine Elimination Project

Technical Challenges:

- **Identifying root causes of contamination:** Determining the specific sources and reasons for contamination within the manufacturing process can be complex and require in-depth analysis. It may involve conducting extensive investigations and implementing advanced testing methods.
- **Implementing structural changes:** Modifying manufacturing equipment and processes to reduce contamination requires careful planning and execution. It involved production line disruptions, and coordination with multiple stakeholders.
- **Developing new cleaning processes:** Creating effective and efficient cleaning processes that eliminate the need for washing while maintaining the required cleanliness standards was a technical challenge. It involved trial and error, testing different methods, and optimizing the cleaning procedures.
- **Quality control:** Ensuring consistent quality of parts without relying on washing necessitates the implementation of robust quality control measures. Establishing new inspection techniques and criteria to verify the cleanliness and integrity of the parts was technically demanding.

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Challenges faced in countering Washing Machine Elimination Project

Administrative Challenges:

Supplier collaboration: Building strong collaborative relationships with suppliers requires effective communication, trust, and alignment of goals. It was challenging to ensure consistent engagement, obtain their buy-in, and facilitate the necessary changes across the supply chain.

Coordination between departments: The project involved multiple departments, such as engineering, production, quality control, and procurement. Coordinating efforts and ensuring effective communication between these departments was administratively complex, especially when implementing structural changes and new processes.

Resource allocation: Allocating resources, such as funding, personnel, and time, to support the project posed administrative challenges. Prioritizing the project amidst competing initiatives and securing necessary resources required strong leadership and organizational support.

Priorities plan and Resource requirements:

Water Conservation Initiatives: Investment in water-saving equipment and technologies. Conduct water audits to identify areas of high water consumption. Implement water-efficient processes and technologies, such as low-flow fixtures, recycling systems, and rainwater harvesting. Establish water usage reduction targets and implement monitoring systems. Promote employee awareness and training programs on water conservation.

Footprint Reduction Strategy: Investment in renewable energy sources. Conduct a comprehensive carbon footprint assessment. Identify areas of high carbon emissions and develop mitigation strategies. Increase the use of renewable energy sources, such as solar or wind power. Optimize transportation logistics to reduce fuel consumption and emissions.

Advanced Waste Management System: Investment in waste reduction and recycling infrastructure. Conduct a waste audit to identify waste streams and their disposal methods. Implement waste reduction strategies, such as waste segregation and recycling programs.

Technology-driven Environmental Monitoring: Environmental monitoring equipment, data analysis software. Invest in advanced environmental monitoring systems. Continuously monitor key environmental parameters such as air quality, water quality, and emissions. Analyze and interpret collected data to identify trends, anomalies, and areas for improvement.

Best practices that can form the core of your approach for the next one year (+1) and two years (+2):

- Develop policies, procedures, and objectives to guide environmental performance improvement. Conduct regular environmental audits and evaluations to identify areas for improvement.
- **Energy Efficiency Measures:** Conduct energy audits to identify energy-saving opportunities. Invest in energy-efficient technologies and equipment. Implement employee awareness programs to promote energy conservation practices.
- **Water Conservation:** Monitor water consumption and identify areas of high usage. Implement water-saving technologies and practices. Educate employees on the importance of water conservation.
- **Recycling:** Implement waste segregation programs to separate recyclables from general waste. Explore opportunities for waste reduction through process optimization and recycling initiatives. Promote a culture of waste consciousness and responsible disposal.
- **Sustainable Procurement:** Develop sustainable sourcing guidelines and criteria. Collaborate with suppliers to ensure their adherence to environmental standards. Prioritize suppliers with robust sustainability practices.

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- **Employee Engagement and Training:** Conduct regular training programs on environmental awareness and best practices. Involve employees in sustainability initiatives and encourage their active participation. Recognize and reward employees for their contributions to environmental goals.
- **Supply Chain Collaboration:** Engage suppliers and stakeholders to improve environmental performance across the supply chain. Share best practices and knowledge on sustainability initiatives. Encourage suppliers to adopt sustainable practices.
- **Renewable Energy Adoption:** Invest in renewable energy sources like solar or wind power. Conduct feasibility studies for on-site renewable energy generation. Explore opportunities for off-site renewable energy procurement.
- **Stakeholder Engagement and Communication:** Engage with customers, investors, and communities to communicate environmental efforts and achievements. Seek feedback and input on sustainability initiatives. Publish regular sustainability reports to demonstrate transparency.
- **Improvement and Monitoring:** Set measurable targets and track progress towards environmental goals. Continuously monitor and analyze key environmental metrics. Implementing these best practices will help create a holistic and sustainable approach to environmental management, enabling continuous improvement and long-term positive impacts.

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Learnings :

- **Collaboration is key:** The success of the project relied on strong collaboration between suppliers and manufacturers. Building collaborative relationships, sharing knowledge, and aligning goals derived significant improvements in efficiency and quality.
- **Root cause analysis is crucial:** By conducting a thorough analysis of the parts that required washing and understanding the reasons behind it, the project team could address the root causes of contamination. This approach helps in developing effective and targeted solutions rather than just treating the symptoms.
- **Structural changes yield long-term benefits:** Modifying the manufacturing processes and equipment to reduce contamination and eliminate the need for washing resulted in long-term benefits. Investing in structural changes leads to improved efficiency, reduced costs, and enhanced quality.
- **Packaging plays a critical role:** Improving the packaging of parts to prevent contamination during transport was an essential aspect of the project. Packaging design and materials should be carefully considered to minimize the risk of damage and maintain the integrity of parts.

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Learnings :

- **Continuous improvement is necessary:** The project highlighted the importance of a continuous improvement mindset. Regular evaluation, refinement, and adaptation of processes and practices help drive ongoing efficiency gains and sustainability improvements.
- **Supplier engagement is beneficial:** Engaging suppliers in the project and collaborating with them to improve processes and practices can bring significant benefits. Establishing long-term partnerships focused on sustainability and quality improvement can lead to mutual success.
- **Knowledge sharing is powerful:** Documenting the project as a case study and sharing the knowledge gained can inspire and educate others in the industry.
- **Commitment to sustainability pays off:** The project demonstrated that sustainability initiatives can deliver tangible benefits, such as cost savings, improved efficiency, and reduced environmental impact. Organizations should prioritize sustainability as a strategic goal and invest in sustainable practices.
- **Employee involvement is crucial:** Engaging employees and providing training on new processes and practices fosters a culture of sustainability and continuous improvement. Employees can contribute valuable ideas, and their active involvement enhances the success.

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Thank you

