

Leveraging the Power of Artificial Intelligence in Manufacturing Industry



**Program: Innovating Education & Entrepreneurship for Global
Digital Economy**





AI in Manufacture Group

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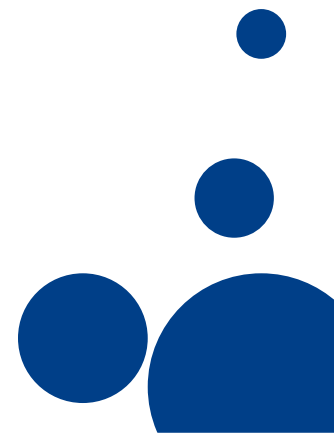
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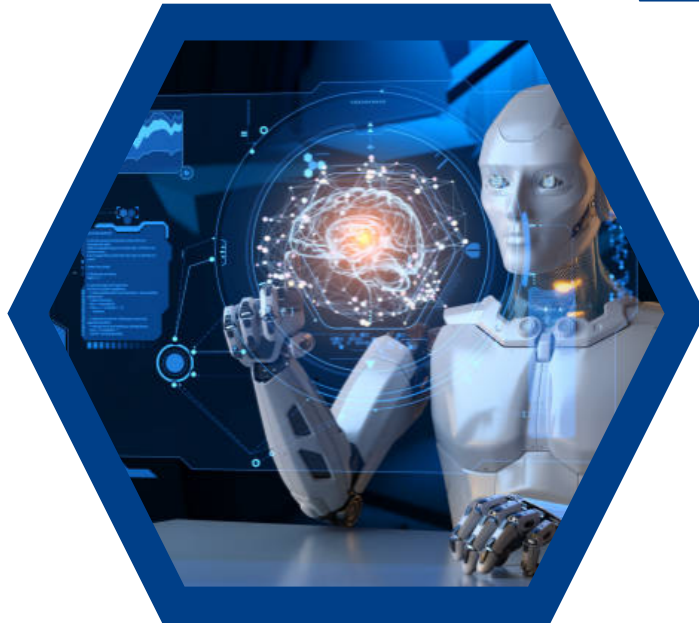
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AI?

AI continues to transform the way things are made by making them more efficient, creative, and flexible in many areas, including predictive maintenance, quality control, and supply chain optimization.



Overview !!

- ❑ Applying AI to the manufacturing sector is a huge step forward for operational excellence, creativity, and flexibility in a field that has always been marked by fierce competition and constant change.



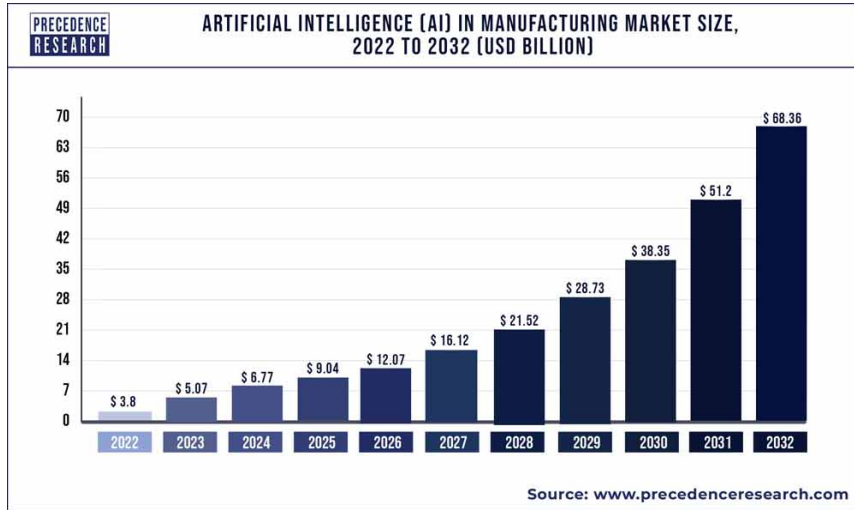
Objectives

- ❑ **Assess Impact:** Evaluate how AI enhances manufacturing efficiency.
- ❑ **Investigate Deployment:** Analyze the integration of AI technologies.
- ❑ **Evaluate Streamlining:** Scrutinize AI's role in refining production workflows.



2 Significance

AI Application growth in manufacture

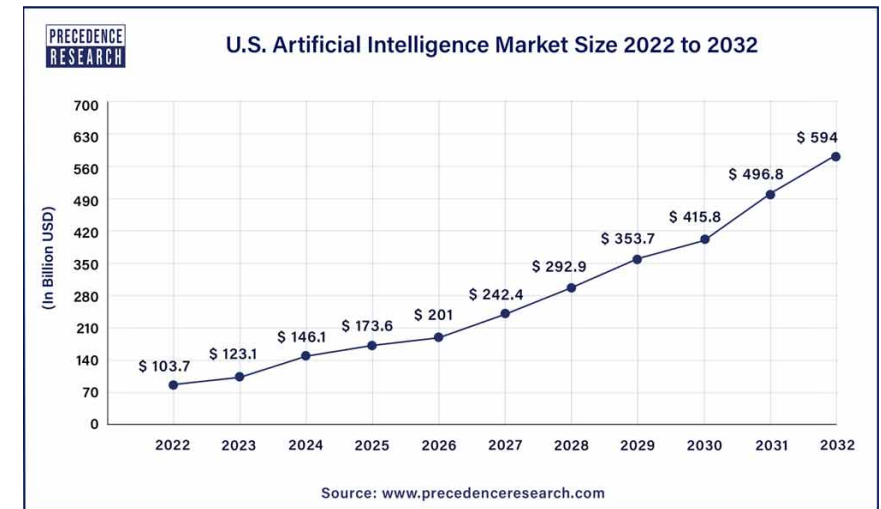
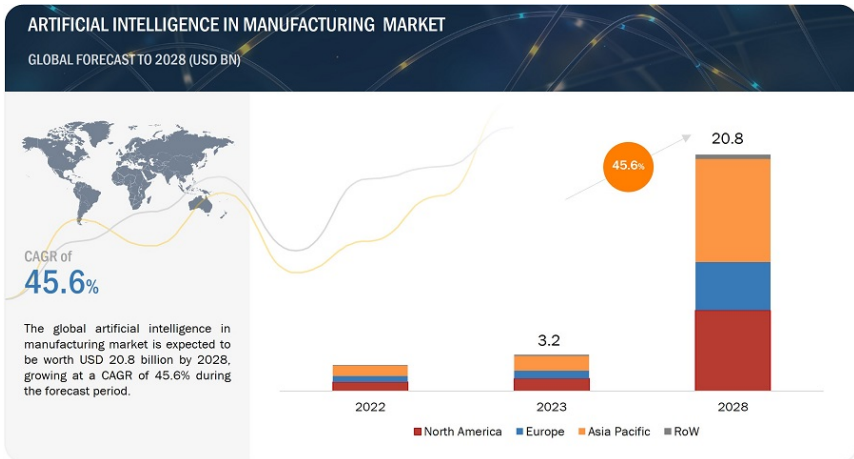
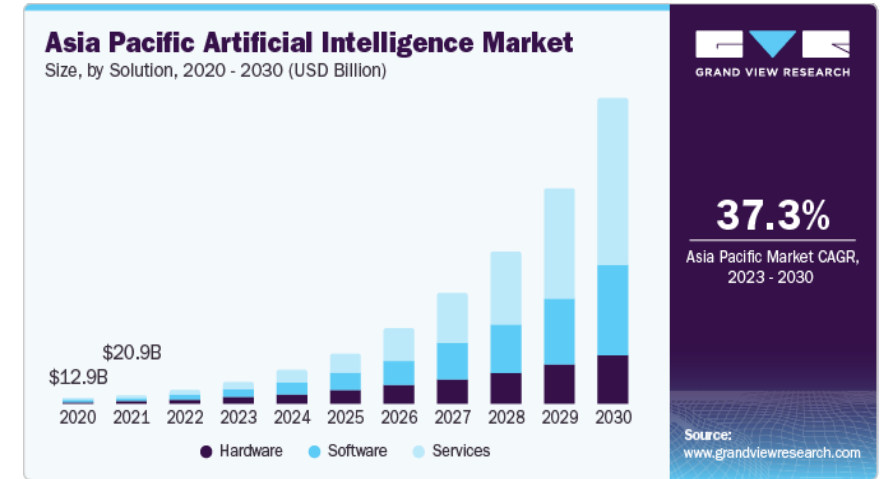


“ **HOW?**

AI improves operations and accelerates digital transformation in manufacturing. This overview highlights these crucial points:

- Operational Advancements
- Digital Transformation

”



Transformative AI Applications in Manufacturing



1

Predictive Maintenance

- AI-enabled predictive maintenance leverages machine learning and IoT to anticipate equipment failures, reducing downtime and costs.

2

Quality Control Precision

- This improved product inspection and evaluation. AI systems can detect minute faults at scales and precision beyond human capacity, improving product quality and consistency.

3

Supply Chain Resilience

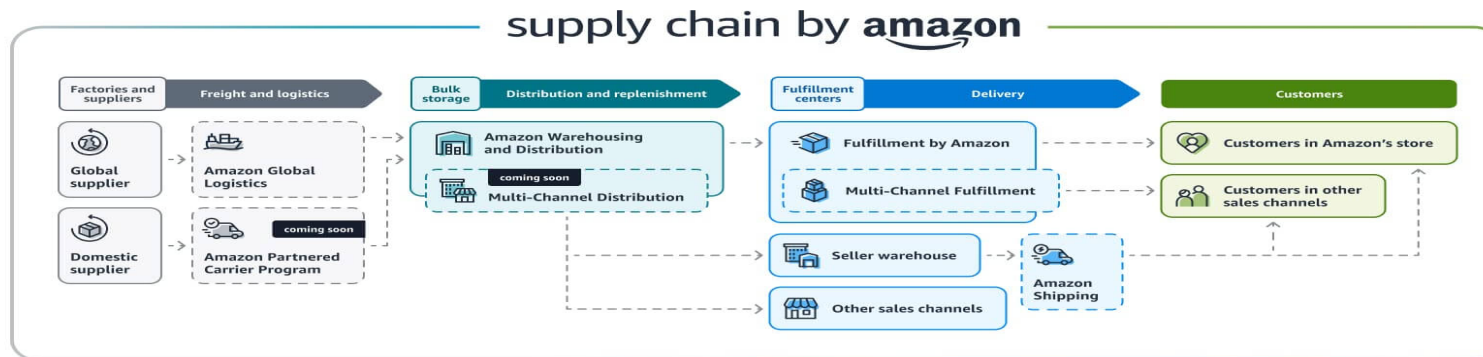
- AI helps supply chains avoid interruptions by predicting and mitigating issues.
- AI algorithms analyze massive information to give firms real-time supply chain visibility and improve decision-making.

4

Customized Production

- AI-driven customized production allows for the creation of personalized products at scale, meeting unique customer demands efficiently.

Example



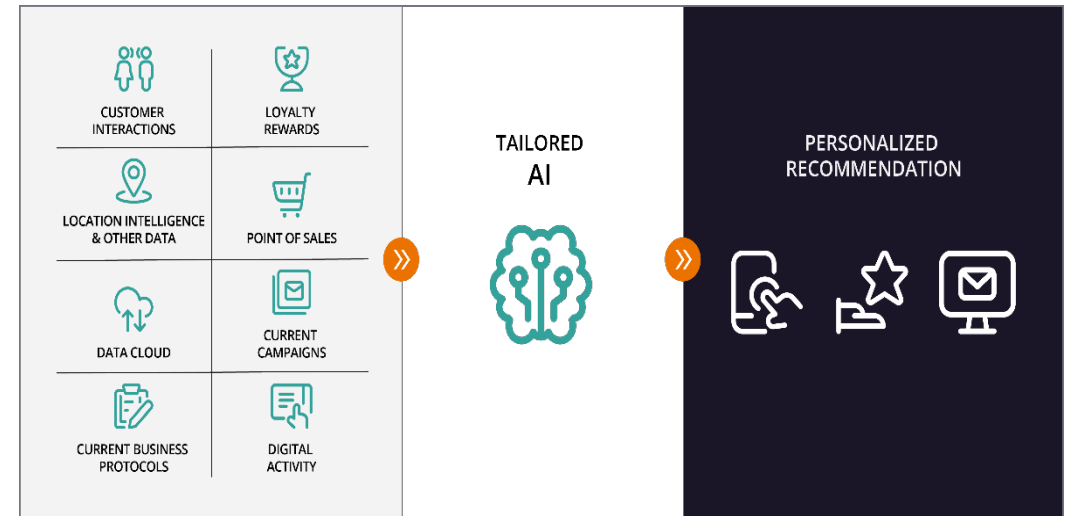
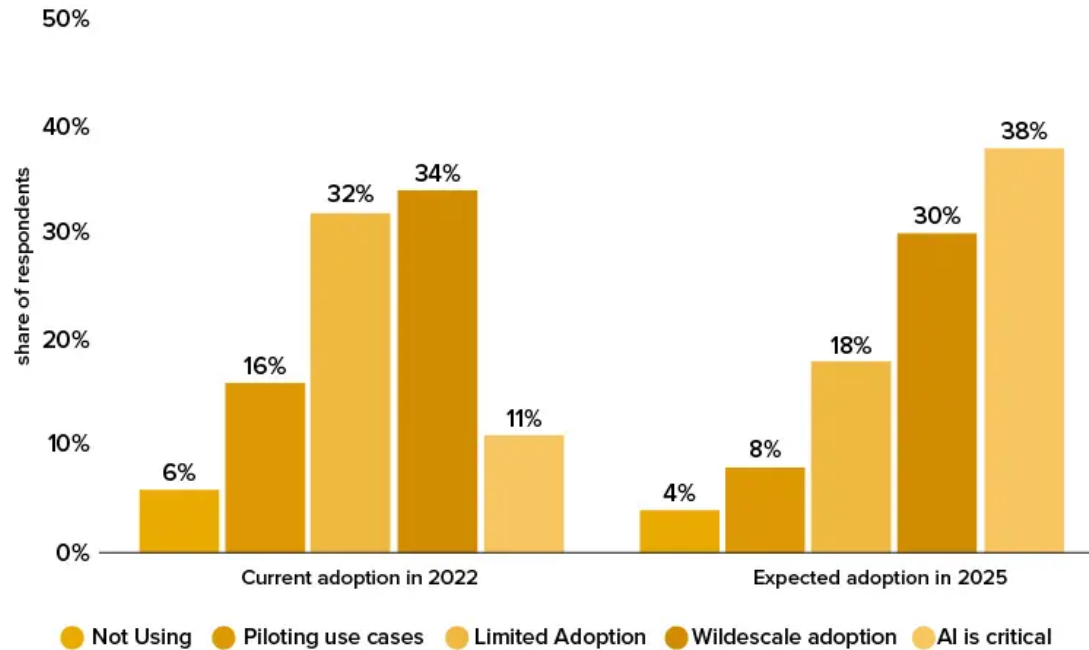
4 Consideration

AI adoption in the manufacturing sector has the potential to drive growth, innovation, and productivity

AI Adoption Rate in Supply Chain Globally: 2022- 2025



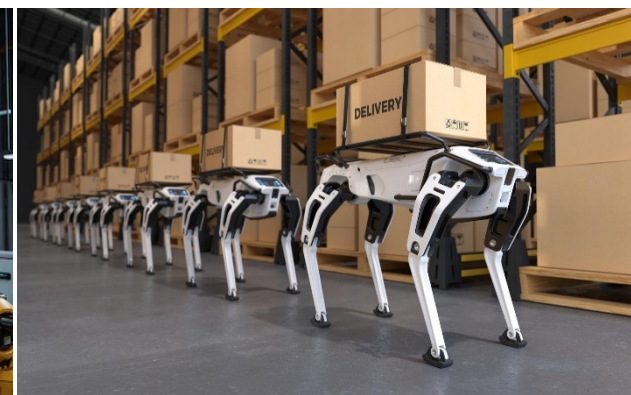
- data integrity and security
- addressing workforce displacement and re-skilling needs
- managing the ethical use of AI.



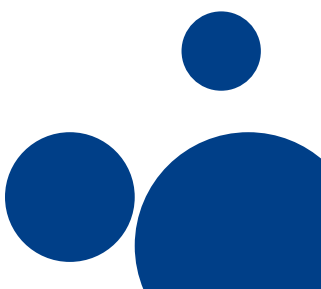
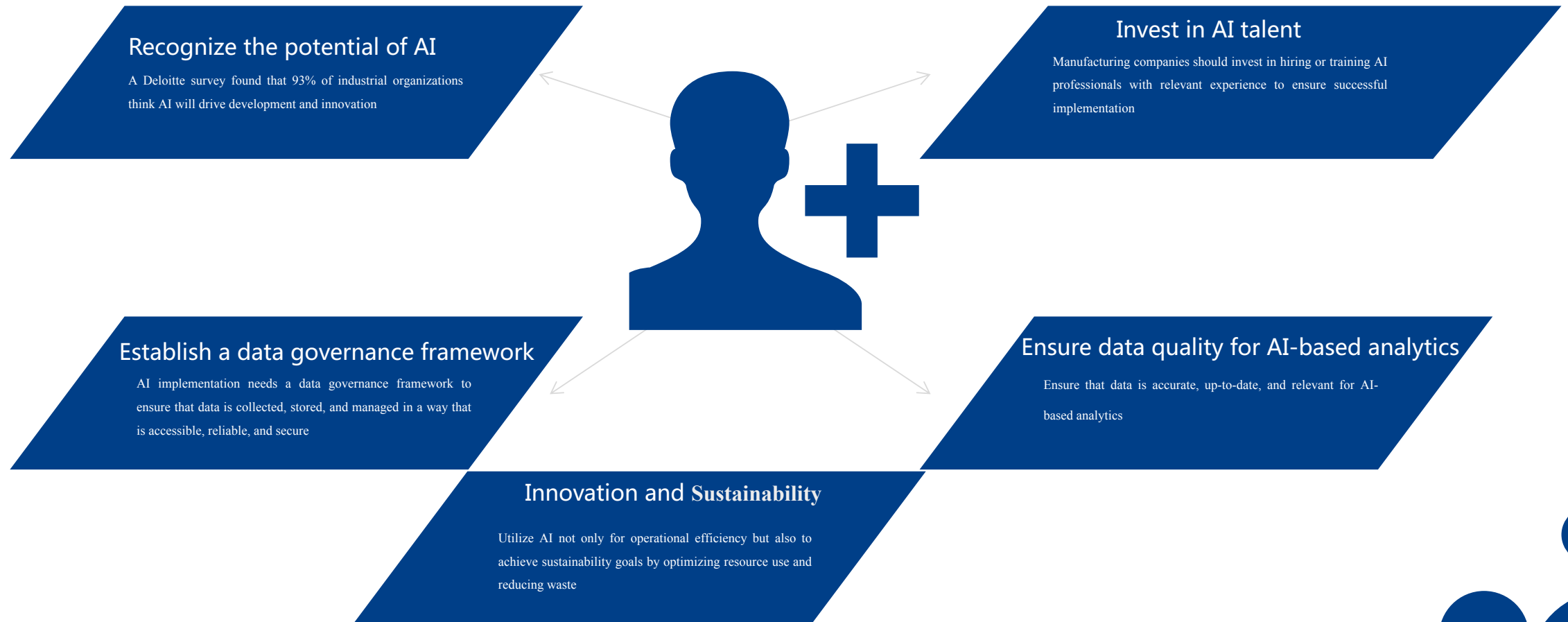
Analysis of AI Implications and Societal Impact



- ❑ Siemens.
- ❑ Foxconn's
- ❑ GE Fanuc Corporation



Recommendations for AI Adoption in Manufacturing



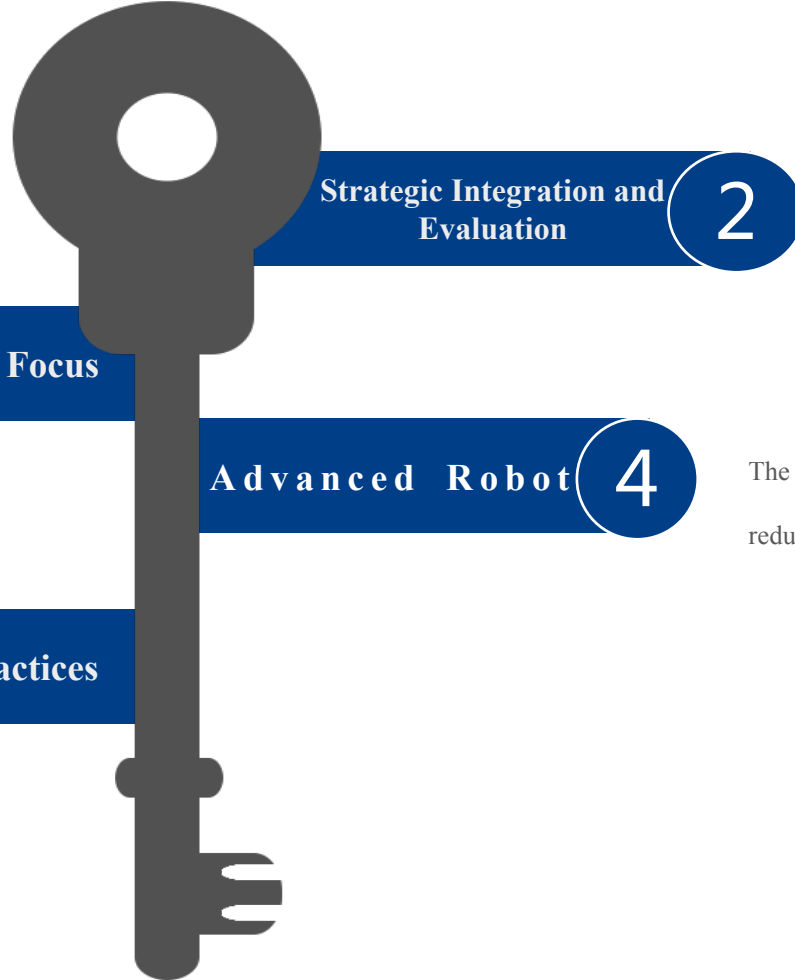


Businesses are prioritizing responsible investing, lowering emissions, adopting sustainable practices,

1 Sustainability Focus

Training and auditing systems on a wide range of data to make sure they are fair and that strict data protection and security rules are followed.

3 Ethical AI Practices



2 Strategic Integration and Evaluation

Strategic AI integration in manufacturing should comprise process audits and focused pilot projects to identify areas where AI adds the greatest value.

4 Advanced Robot

The advanced automation is improving efficiency, reducing errors, and enabling customization at scale,





- ❖ Integration of Artificial Intelligence (AI) in the manufacturing industry has improved operational efficiency, product quality, and sustainability.
- ❖ AI technologies such as predictive maintenance, quality control, supply chain optimization, robotics, and customization have led to smarter, more adaptable, and safer production environments.
- ❖ Ethical considerations, workforce displacement, and technical complexities remain its great challenge.
- ❖ Manufacturers must adopt strategic planning, ensure ethical AI use, invest in workforce development, focus on sustainability, and remain adaptable to continuous innovation.



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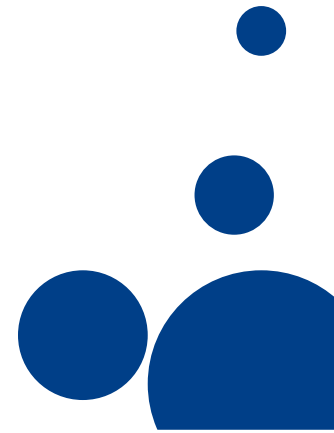
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T H A N K S

谢谢观看

