Assignment:

Group Report ET P1

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Project 1: Evaluation – Group Report

Introduction

The Organization: DEF Manufacturing

DEF Manufacturing's History -

- DEF Manufacturing was merely a small crew of four at the start of its history, selling and repairing small electronics for locals in 2005. Moving to the present, DEF Manufacturing is now a well-known player in the industrial manufacturing sector, famous for its wide range of products from complex machinery to small simple electronics. With the original four continually looking for innovation and excellence, the company has evolved over the years, establishing a global presence, with hundreds of manufacturing facilities located worldwide. Despite all these achievements, DEF Manufacturing still faces persistent challenges that stunt its growth and overall profitability.

DEF Manufacturing's Line of Business -

- DEF Manufacturing line of business specializes in the production of industrial products. Supplying to various sectors such as machinery, electronics, and more. Considering its vast number of employees (exceeding 10,000) and a robust network of factories, the company is deeply entrenched in the manufacturing landscape.

Business Gap

The Impact -

- DEF Manufacturing has two significant challenges in its operations. First of all, the company holds a high rate of defects in its products despite attempting to implement strict quality control measures. Resulting in many products being returned or simply failing while in customer hands. This issue not only compromises customer satisfaction, but also ruins overall revenue and damages their reputation. The second issue is that DEF Manufacturing struggles with the lack of transparency and visibility within its supply chain network. Considering their massive network of suppliers and subcontractors. Tracking each and every material, from origin, to overall quality, becomes a near-impossible task. This results in the company being vulnerable to several

inefficiencies and risks.

- Continuing without patching these gaps poses both obvious and subtle consequences for DEF Manufacturing. At first glance, the high defect rate of products directly translates to financial losses, which stems from returned products, warranty claims, etc. In addition to this, the deterioration of customer trust and brand reputation may lead to a decline in market share and an overall competitive disadvantage. Besides the initial financial effects, the lack of visibility in the supply chain also introduces inefficient operations, hindered product quality, and exposes the company to compliance risks (failing to follow laws, industry standards and such). All in all, these challenges hurt DEF Manufacturing's potential for sustainable company growth.

Evaluation Tool

The evaluation tool is a structured framework designed to assess emerging technologies against specific criteria that are critical to DEF Manufacturing's operational and strategic goals. The tool incorporates seven criteria:

Waighing Criteria -

- Feasibility: assesses whether it is technically and operationally viable for DEF Manufacturing to implement a given technology. This criterion is given a 15% weight, emphasizing the importance of understanding the practicality of new technologies within the existing manufacturing environment. It considers factors like the current technological infrastructure, the need for new equipment, and any limitations in technological compatibility. A technology's feasibility score will guide DEF Manufacturing in identifying solutions that can be realistically deployed to meet its operational needs [5], [6].

- Cost involves evaluating both the initial investment required for technology implementation and the ongoing expenses it may incur. With a weight of 20%, this criterion highlights the significance of aligning technology adoption with DEF Manufacturing's financial strategies. Cost-effectiveness is crucial, as the company seeks to ensure that any technological investment offers a favorable return on investment (ROI), considering both direct costs (e.g., purchasing, installation) and indirect costs (e.g., maintenance, operational adjustments).

- Impact Quality Control is the most heavily weighted criterion at 25%, underlining DEF Manufacturing's commitment to enhancing product quality and reducing defects. This weight reflects the company's goal to significantly lower the rate of product returns and failures in the field. Technologies that can directly contribute to improving manufacturing precision, detecting potential defects early, or enhancing the overall product quality control process are deemed highly valuable.

- Supply Chain Transparency: addresses the ability of technology to improve visibility and traceability throughout DEF Manufacturing's extensive network of suppliers and subcontractors. Assigned a 15% weight, this criterion acknowledges the challenge of monitoring the origin and quality of materials used in production. Enhancing supply chain transparency is critical for ensuring product quality, regulatory compliance, and ethical sourcing practices.

- Integration Ease: evaluates how seamlessly a new technology can be incorporated into DEF Manufacturing's current systems and processes, carrying a 10% weight. This includes compatibility with existing software, hardware, and operational workflows. Technologies that offer ease of integration are preferred to minimize disruption and facilitate a smoother transition, ultimately accelerating the realization of benefits.

- Employee Training: Needs considers the extent of training required for staff to effectively use and maintain the new technology, also weighted at 10%. This reflects DEF Manufacturing's acknowledgment of its workforce's readiness as a key factor in successful technology implementation. Technologies that require minimal training or that align with existing skill sets can be deployed more rapidly and with less additional investment in workforce development [7].

- Scalability: assesses the technology's capacity to grow and adapt with DEF Manufacturing's evolving needs, given the lowest weight of 5%. This criterion recognizes the importance of future-proofing investments by selecting technologies that can scale in response to increased production demands or changes in manufacturing scope. While scalability is essential for long-term success, it is weighted less heavily than immediate needs like cost, quality control, and feasibility.

Tool Development -

- The evaluation tool was crafted to address DEF Manufacturing's specific challenges: notably, the high defect rates in its products and the obscured visibility within its supply

chain. The tool's design aimed to systematically evaluate potential technologies against these issues, ensuring a clear and accessible framework for decision-making that aligns with DEF Manufacturing's unique operational needs. To test the tool's efficacy, a hypothetical set of technologies was evaluated. Assigning scores based on reasoned assumptions allowed for an initial assessment of the tool's utility and highlighted areas for improvement. This iterative process ensured the tool was both practical and adaptable to DEF Manufacturing's context, providing a solid foundation for evaluating technological solutions to enhance quality control and supply chain management.

Iterations -

- Initially, the evaluation tool assigned equal weight to all criteria, an approach that proved inadequate in reflecting the nuanced priorities of DEF Manufacturing. Recognizing that some criteria were more critical than others in achieving the company's objective of addressing its operational gaps, we adjusted the weights accordingly.
- These modifications were essential to ensure the tool more accurately represented DEF Manufacturing's strategic goals and operational needs. By fine-tuning the criteria weights, the tool's precision and reliability in assessing the potential impact of various technologies on the company's challenges were significantly enhanced.

Confidence -

- We have high confidence in our evaluation tool, designed with DEF Manufacturing's specific needs in mind — addressing high defect rates and improving supply chain visibility. It incorporates seven targeted criteria to maintain focus on these objectives. Feasibility evaluates the ease of integrating new technologies into current processes, while Cost assesses both upfront and ongoing expenses. Impact on Quality Control measures the potential reduction in product defects, and Supply Chain Transparency gauges improvements in tracking and visibility. Integration Ease considers compatibility with existing systems, Employee Training Needs estimates required training efforts, and Scalability examines the technology's capacity to support company growth. This comprehensive approach ensures a well-rounded assessment of technologies against DEF Manufacturing's specific operational challenges.

Candidate Emerging Technologies

Technologies -

- Augmented Reality (AR) offers DEF Manufacturing an innovative solution to enhance operational efficiency and reduce product defects. By overlaying digital information onto the real-world environment, AR can provide workers with real-time, visual guidance during assembly processes. This technology can significantly mitigate the risk of human error, a common cause of product defects, by displaying step-by-step assembly instructions directly in the worker's field of view. Moreover, AR can facilitate remote expert assistance, allowing seasoned engineers to guide on-site workers through complex repair or maintenance tasks without being physically present. This application not only improves the accuracy and quality of manufactured products but also accelerates the training process for new employees, addressing one of the key challenges faced by DEF Manufacturing [1, [2]], .

- Virtual Reality (VR) stands to revolutionize DEF Manufacturing's approach to training and design. Through immersive simulation environments, VR can train workers in a safe, controlled setting, exposing them to various manufacturing scenarios without the risk of real-world consequences. This method proves especially beneficial in reducing the learning curve for complex assembly tasks and safety procedures, directly impacting the reduction of product defects. Additionally, VR can be utilized in the design and prototyping phases of product development, enabling engineers to identify potential manufacturing issues before production begins. This preemptive identification and resolution of design flaws contribute significantly to enhancing the overall quality of the finished products [3], [4], .

- Artificial Intelligence (AI) & Machine Learning (ML) offer profound capabilities to transform DEF Manufacturing's operations through predictive analytics and intelligent automation. By analyzing vast datasets from the manufacturing process, AI algorithms can predict potential failures and identify patterns that may lead to defects, enabling proactive maintenance and quality control measures. Furthermore, ML can optimize production schedules and supply chain logistics, enhancing efficiency and reducing downtime. In terms of supply chain transparency, AI can analyze data from various sources to track the origin and quality of materials used in production, offering a granular view of the supply chain that was previously unattainable. This comprehensive visibility and predictive foresight equip DEF Manufacturing with the tools to significantly reduce product defects and improve supply chain reliability [8], [9].

- Internet of Things (IoT) presents a multifaceted solution to both enhancing product quality and achieving supply chain transparency. By equipping machinery, components, and products with IoT sensors, DEF Manufacturing can achieve real-time monitoring of the production process and the condition of equipment. This data-driven approach enables predictive maintenance, identifying equipment issues before they result in product defects. On the supply chain front, IoT devices can track the movement and condition of materials throughout the supply chain, providing DEF Manufacturing with end-to-end visibility. This level of insight into the supply chain not only helps in ensuring the quality of materials used in production but also aids in identifying bottlenecks, enabling more efficient logistics management. Through the strategic application of IoT, DEF Manufacturing can significantly mitigate its current challenges, leading to improved product quality and a more transparent, efficient supply chain [6].

DEF Manufacturing									Total Points	Final Calculation
		Feasibility	Cost	Impact Quality Control	Supply Chain Transparency	Integration Ease	Employee Training	Scalability		
	Waight %	15%	20%	25%	15%	10%	10%	5%		
Augmented Reality	Points Obtained	9	6	9	7	7	8	7	53/70	7.7/10
Virtual Reality	Points Obtained	7	5	8	4	6	9	5	44/70	6.4/10
AI/ Machine Learning	Points Obtained	6	5	9	8	6	5	8	47/70	6.85/10
Internet of Things	Points Obtained	8	5	9	9	6	6	8	51/70	7.4/10

Ethical Concerns

Augmented Reality (AR) -

- In the context of DEF Manufacturing, the implementation of Augmented Reality (AR) poses ethical concerns related to employee privacy and data security. As AR devices can capture and display real-time information about the manufacturing environment, there's a risk of inadvertently collecting sensitive employee data or proprietary information. Ethical considerations must include stringent measures to protect this data and ensure that employees are fully informed about what information is collected and how it is used. Furthermore, the potential for AR to blur the lines between digital content and real-world actions necessitates clear guidelines to prevent misuse and protect worker autonomy.

Virtual Reality (VR) -

- In DEF Manufacturing, the use of Virtual Reality (VR) for training, simulation, and design processes introduces ethical considerations regarding the psychological impact on employees and the potential for inducing a disconnection from the real-world work environment. VR's immersive nature can significantly benefit training programs by simulating complex scenarios without the associated risks. However, prolonged exposure to VR environments may affect employees' perception and interaction with real-world tasks, potentially leading to issues of disorientation or reduced ability to engage with actual manufacturing processes. Ethical deployment of VR in DEF Manufacturing requires careful design of VR content to avoid psychological discomfort, clear guidelines on usage duration, and support for employees to integrate VR experiences with their real-world tasks effectively, ensuring a healthy balance between virtual training and actual operational activities.

Artificial Intelligence (AI) and Machine Learning (ML) -

- The application of Artificial Intelligence (AI) and Machine Learning (ML) within DEF Manufacturing introduces ethical issues surrounding algorithmic bias and decision transparency. AI systems utilized for automating quality control or supply chain decisions may inadvertently perpetuate existing biases if trained on historical data that contains discriminatory patterns. This could lead to unfair treatment of certain suppliers or biased inspection outcomes. To mitigate these concerns, DEF Manufacturing must prioritize the development of unbiased AI models and implement transparent AI decision-making processes, ensuring that all stakeholders understand how AI influences manufacturing and supply chain decisions.

Internet of Things (IoT) -

- For DEF Manufacturing, the deployment of the Internet of Things (IoT) technology raises ethical questions related to surveillance and the security of interconnected devices. The extensive network of IoT sensors and devices designed to monitor production processes and track supply chain logistics could lead to excessive surveillance of employees or unauthorized access to sensitive operational data. Ensuring ethical use of IoT involves establishing clear policies on data collection and usage, securing IoT devices against cyber threats, and maintaining a balance between operational efficiency and respecting employee privacy .

Evaluation

Point Allocation Justification -

	1	2	3	4	5	6	7	8	9	10
Feasibility (15%)	Significant technical barriers Operational change	_	_	_	_	_	_	_	_	Minimal operational disruption
Cost (20%)	Under $10 million (USD)	_	_	_	_	_	_	_	_	Above $1 Billion (USD)
Impact on Quality Control (25%)	Negligible	_	_	_	_	_	_	_	_	Over 50% Defect Reduction
Supply Chain Transparency (15%)	No Improvement	_	_	_	_	_	_	_	_	Complete Transperency
Integration Ease (10%)	Significant Compatability Issues	_	_	_	_	_	_	_	_	Plug- and-Play
Employee Training (10%)	Extensive Training/New Hiring	_	_	_	_	_	_	_	_	No Training
Scalability (5%)	Not Scalable	_	_	_	_	_	_	_	_	Easily Grow and meet demand

Augmented Reality -

- These scores reflect Augmented Reality's strong potential for improving quality control and its feasibility for implementation in a manufacturing setting like DEF Manufacturing's. The relatively moderate scores for cost and scalability indicate areas where careful planning and phased deployment could manage investment and expansion effectively.

Feasibility (15%)
Score: 8
Explanation: AR technology is relatively mature and can be integrated into manufacturing environments with existing hardware like tablets and smart glasses, making it technically feasible for DEF Manufacturing.

Cost (20%)
Score: 6
Explanation: The cost of AR implementation includes hardware, software development, and licensing fees. While not excessively high, these costs can accumulate, especially for a large-scale deployment across multiple facilities.

Impact on Quality Control (25%)
Score: 9
Explanation: AR can significantly reduce product defects by providing real-time overlays of plans and instructions directly onto the workpiece, improving precision and reducing human error in quality control processes.

Supply Chain Transparency (15%)
Score: 7
Explanation: While AR's primary strengths lie in operational efficiency and training, it can also enhance supply chain transparency by visually linking parts and products to digital records of origin and handling instructions.

Integration Ease (10%)
Score: 7
Explanation: AR can be integrated with existing manufacturing and quality control systems, although some customization and development work is needed to align with specific operational processes.

Employee Training Needs (10%)
Score: 8
Explanation: AR applications are typically user-friendly and intuitive, reducing the learning curve. However, some initial training is required to familiarize employees with the new tools.

Scalability (5%)
Score: 7
Explanation: AR solutions can be scaled across different parts of the manufacturing process and to various locations, although this might require additional investments in hardware for new areas.

Virtual Reality -

- These scores highlight the potential of Virtual Reality primarily as a tool for enhancing training programs, which can indirectly impact quality control by reducing errors through improved employee skills. The cost and scalability of VR are notable concerns for DEF Manufacturing, suggesting that VR initiatives may need to be carefully targeted to areas where they can provide the most value.

Feasibility (15%)
Score: 7
Explanation: VR technology is well-developed and offers immersive training and simulation experiences. However, its application in manufacturing settings is more limited compared to AR, primarily due to its fully immersive nature which is not suited for all types of tasks.

Cost (20%)
Score: 5
Explanation: Implementing VR, especially for training on a large scale, involves significant investment in VR headsets and development of custom simulation software, which can be costly for a company as large as DEF Manufacturing.

Impact on Quality Control (25%)
Score: 8
Explanation: VR can have a substantial impact on quality control by providing immersive training environments that improve the skill set of employees, leading to fewer mistakes in the actual production process.

Supply Chain Transparency (15%)
Score: 4
Explanation: VR's role in enhancing supply chain transparency is indirect, primarily focusing on training and simulation rather than direct supply chain management or tracking, hence the lower score.

Integration Ease (10%)
Score: 6
Explanation: Integrating VR into existing training programs can be challenging, requiring both hardware setup and software development. However, once in place, it can be a powerful tool for employee development.

Employee Training Needs (10%)
Score: 9
Explanation: VR offers an engaging and effective training modality, significantly enhancing learning retention. The technology is intuitive, and users can gain proficiency quickly through immersive experiences.

Scalability (5%)
Score: 5
Explanation: While VR training programs can be scaled to different subjects and departments within the company, the need for individual headsets and space for safe use limits its scalability compared to less immersive technologies.

Artificial Inteligence/ Machine Learning -

- AI/ML holds great potential for DEF Manufacturing, particularly in improving quality control and enhancing supply chain transparency through predictive analytics. However, its successful implementation demands a robust data infrastructure, significant upfront investment, and a commitment to upskilling employees. The moderate to high scores in feasibility, impact, and scalability reflect AI/ML's transformative potential balanced against the challenges of integration and employee training needs.

Feasibility (15%)
Score: 6
Explanation: AI and ML technologies have advanced significantly, but their implementation in manufacturing settings requires substantial data infrastructure and expertise, which can pose challenges.

Cost (20%)
Score: 5
Explanation: The initial investment in AI/ML can be high, considering the need for data collection infrastructure, computing resources, and specialized personnel to develop and maintain models.

Impact on Quality Control (25%)
Score: 9
Explanation: AI/ML excels in identifying patterns and predicting failures, enabling proactive quality control measures and significantly reducing the defect rate in products through predictive maintenance and quality inspection automation.

Supply Chain Transparency (15%)
Score: 8
Explanation: AI/ML can analyze vast amounts of supply chain data to provide insights into material flows, predict disruptions, and optimize inventory levels, thereby increasing transparency.

Integration Ease (10%)
Score: 6
Explanation: Integrating AI/ML with existing systems can be complex, requiring both technical adjustments and cultural adaptation to data-driven decision-making processes.

Employee Training Needs (10%)
Score: 5
Explanation: The effectiveness of AI/ML depends on employees' ability to interpret and act on the system's insights, necessitating significant training in data literacy and new operational procedures.

Scalability (5%)
Score: 8
Explanation: Once established, AI/ML models can be relatively easily scaled across different processes and locations, benefiting from network effects as more data enhances model accuracy.

Internet of Things -

- IoT stands out for its potential to drastically improve supply chain transparency and quality control within DEF Manufacturing. The technology's high feasibility and scalability scores indicate it could be a robust solution for the company. However, considerations around cost, integration complexity, and the need for employee training highlight the importance of strategic planning and phased implementation.

Feasibility (15%)
Score: 8
Explanation: IoT technology is well-established and can be readily implemented in manufacturing settings. It leverages existing network infrastructure and sensor technologies, making it feasible for large-scale integration.

Cost (20%)
Score: 5
Explanation: The initial setup of an IoT system, including sensors, network infrastructure, and integration with existing systems, can be costly. However, the long-term benefits often justify these expenses.

Impact on Quality Control (25%)
Score: 9
Explanation: IoT significantly impacts quality control by enabling continuous monitoring of production processes and equipment health. It allows for real-time adjustments and predictive maintenance, reducing downtime and defects.

Supply Chain Transparency (15%)
Score: 9
Explanation: IoT excels in enhancing supply chain transparency. Sensors and tracking technologies can monitor materials from origin to delivery, providing unparalleled visibility into the supply chain.

Integration Ease (10%)
Score: 6
Explanation: While IoT devices can often be integrated with existing systems, challenges may arise due to the need for comprehensive data management solutions and ensuring compatibility across different types of devices and platforms.

Employee Training Needs (10%)
Score: 6
Explanation: Implementing IoT solutions requires training employees not only on how to interact with new systems but also on how to interpret and act on data insights, which can require a significant shift in operations and mindset.

Scalability (5%)
Score: 8
Explanation: IoT solutions are highly scalable, allowing for incremental expansion as more devices can be added to the network. However, managing a large number of devices and the data they generate can become complex.

Report Results

DEF Manufacturing										Final Calculation
		Feasibility	Cost	Impact Quality Control	Supply Chain Transparency	Integration Ease	Employee Training	Scalability	Total Points	
	Waight %	15%	20%	25%	15%	10%	10%	5%		
Augmented Reality	Points Obtained	9	6	9	7	7	8	7	53/70	7.7/10
Virtual Reality	Points Obtained	7	5	8	4	6	9	5	44/70	6.4/10
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Internet of Things	Points Obtained	8	5	9	9	6	6	8	51/70	7.4/10

Feasibility (15%)
Evaluates the technical and operational ease of implementing a technology within existing workflows and infrastructure.

Integration Ease (10%)
Measures how easily the technology can be integrated with existing systems and technologies.

Cost (20%)
Considers both the initial investment and ongoing costs relative to DEF Manufacturing's financial resources.

Impact Quality Control (25%)
Assesses the technology's potential to significantly reduce product defects and improve overall product quality.

Supply Chain Transparency (15%)
Evaluates the technology's ability to enhance visibility into the supply chain, from raw materials to finished products.

Employee Training (10%)
Considers the extent of training required for employees to effectively use the technology.

Scalability (5%)
Assesses the technology's capacity to grow and adapt to DEF Manufacturing's future needs without significant

- Augmented Reality: 7.7/10
- Virtual Reality: 6.4/10
- AI/ Machine Learning: 6.85/10
- Internet of Things: 7.4/10

Augmented Reality (AR) -

- leads the assessment with a final score of 7.7/10, indicating it as the most aligned technology with DEF Manufacturing's strategic goals. The high marks in feasibility, impact on quality control, and employee training suggest AR is both practical to implement and effective in addressing critical quality issues, making it a strong candidate for closing the gaps in product defects and supply chain visibility.

The Internet of Things (IoT) -

- follows closely with a score of 7.4/10. Its superior performance in enhancing supply chain transparency and maintaining high standards in quality control shows IoT as a strong contender, particularly for long-term integration into DEF Manufacturing's operations.

AI/Machine Learning -

- has received a respectable score of 6.85/10, showing particular strength in quality control and supply chain transparency. Its potential is noteworthy for predictive analytics and process optimization, indicating it could play a significant role in data-driven decision-making for quality and supply chain management.

Virtual Reality (VR) -

- concludes the list with a score of 6.4/10, excelling in employee training but falling behind in supply chain transparency. This score suggests that while VR has specific applications, particularly in immersive training and simulation, it may not address DEF Manufacturing's immediate operational challenges as effectively as AR or IoT.

In summary, each technology holds distinct advantages, but AR appears to be the best fit for DEF Manufacturing's immediate requirements, followed by IoT, AI/Machine Learning, and VR. This assessment aids in directing focus towards technologies that are most likely to enhance DEF Manufacturing's operational efficiency and product quality.

Conclusion

In addressing the challenges faced by DEF Manufacturing — a high rate of product defects and limited visibility within the supply chain — our evaluation tool was deployed to systematically assess the potential of various emerging technologies. These technologies were selected with the intent to identify the most effective solutions to bridge these gaps.

The evaluation tool, designed specifically for DEF Manufacturing, incorporated seven criteria: Feasibility, Cost, Impact on Quality Control, Supply Chain Transparency, Integration Ease, Employee Training Needs, and Scalability. Each criterion was weighted based on its relative importance to DEF Manufacturing's objectives.

Upon applying this tool, Augmented Reality (AR) emerged as the most promising technology with a score of 7.7/10. AR's strong showing, particularly in its feasibility and impact on quality control, positions it as a capable tool for reducing defects and enhancing manufacturing precision. Its good scores in employee training needs and scalability also suggest it can be adopted effectively at DEF Manufacturing's scale.

In conclusion, the evaluation tool has provided DEF Manufacturing with a clear direction for technology investment. Augmented Reality stands out as the leading option to address current operational challenges, followed closely by IoT, with AI/ML and VR as supplementary tools for specific applications. This strategic approach to technology adoption, driven by the evaluation tool, positions DEF Manufacturing to close its operational gaps and improve its competitive stance in the industry.

Glossary

Term	Description
AI (Artificial Intelligence)	A branch of computer science that deals with the simulation of intelligent behavior in computers. AI enables machines to learn, and intake requests and inputs to generate an educated response.
ML (Machine Learning)	Machine Learning is a subset of AI that develops algorithms over time and experience that is able to make educated assumptions based on previous data to perform a task without being directly told.
IoT (Internet of Things)	Internet of Things is a network of physical objects that are embedded with software and other technologies to connect and exchange data with other systems over an internet connection to provide a secure and reliable sharing environment.
AR (Augmented Reality)	Augmented Reality is an interactive experience where information generated by a computer is used as an overlay in a real-world environment. This allows a different perception of reality for the user.
VR (Virtual Reality)	Virtual Reality is a simulated experience using computer technology that is able to completely immerse a user into a digital environment that is interactable and completely different from the physical world.
Blockchain	A Blockchain is a decentralized, distributed ledger technology that records a digital asset. This is generally used for transactions, fraud mitigation, and ensured transparency in many applications.
Predictive Analysis	Techniques that use historical data, algorithms, and machine learning to identify

	the chances of a future outcome. This type of analytical approach is generally used for maintenance and quality control for products.
Smart Technologies	Smart Technologies are integrated technologies that combine AI, IoT, and other systems to provide automated and accurate solutions in a wide variety of industries, and have made an impact on manufacturing.

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