

CS449-Internet of Things

Float Date: 03/10/2023

Submission Date: 12/10/2023

Note: Plagiarism should not be more than 10%.

Case Study Assignment

Case Study 1: A state of the art usage of IoT in Healthcare.

Case Study 2: IoT is a very useful nowadays for automation in Manufacturing Industries.

Case Study Submission Template

Student Name	Rushik Rajeshbhai Rathod
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CASE STUDY TITLE	IoT is a very useful nowadays for automation in Manufacturing Industries.
Summary	IoT automation is transforming the manufacturing industry and makes it more efficient and sustainable. It improves quality and availability time and reduces costs for companies. It makes workers job easier and safer and produces better products and provides better services to the consumers. Overall, IoT is highly beneficial for automation in manufacturing industries.
Issue to be resolved	<ol style="list-style-type: none">1. Manual processes: Old manufacturing techniques are highly depended on the human workers which results in slow process with less accuracy.2. Lack of real-time data: Manufacturing companies cannot track what is happening in their factories. As real time data is not tracked, it is very difficult for them to track problems and provide solutions.

	<p>3. Maintenance: It is very difficult for human workers to maintain all the machines of the companies when suddenly problem occurs in a machine. In some human prohibited areas, it is dangerous for human to enter to solve the issue.</p> <p>4. Quality control: When human workers are working on any product, then it's hard to make every product with same quality.</p> <p>5. High cost of labours: It is difficult for manufactures to make profit when company has to spend a lot of amount in human labours.</p>
Beneficiaries	<ul style="list-style-type: none">• Manufacturing companies• Human workers• Customers• Environment• Supply chain companies
Impact over Beneficiaries	<ul style="list-style-type: none">• Manufacturing companies: These companies can make profit using automation which decreases labour cost and increases efficiency of production.• Human workers: IoT automation provides services in dangerous areas where human cannot enter. As a result, automation helps human workers in terms of safety.• Customers: As automation increases the quality of the products, customers get the best quality product in less time.• Environment: IoT automation decreases the use of environmental resources that increases the energy efficiency for the manufacturing companies.• Supply chain companies: These companies require constant monitoring and scheduling of the products. IoT

	automation helps these type of companies in monitoring production.
Technologies to build	<ul style="list-style-type: none">• Sensors and Actuators: To implement automation in using IoT in manufacturing industries, variety of sensors should be built to collect data and actuators to control the sensors. Sensors can be helpful to measure temperature, pressure, vibration and motion. Actuators can turn things on and off, move them around, or change their settings.• Cloud platform: Using cloud in IoT automation in manufacturing industry will help in storing and integrating data from the sensors and actuators to process in real time.• Connectivity: To make IoT automation efficient in manufacturing industry, connectivity of different devices has to have high internet connectivity and data transfer rate. This can be achieved by using Wi-Fi, Ethernet, etc.• ERP systems: IoT can be integrated with the Enterprise Resource Planning system which will help to analyse the entire view of the industry. As a result, effective decisions can be made to improve the product quality or service quality which directly increases the profit for the industry.• Data visualization and reporting: Transforming data into human readable form and providing them using dashboard to stakeholders will increase the trust for the companies. Here, dashboard should display real time data tracked by sensors and actuators.• Human Machine Interface: Developing human friendly interface for the people working in the industry will make them adopt the new tracking system and to utilize it effectively to monitor what is happening in the company. Here, human machine interface plays crucial role in increasing the productivity of the worker who monitors the industry.

Devang Patel Institute of Advance Technology and Research (DEPSTAR)

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Any other information	<p>When we bring IoT into manufacturing, it's like embarking on a journey that requires careful planning and teamwork with our tech partners. We need to make sure our team is well-prepared with thorough training, and we must pay close attention to keeping our data safe and following the rules. Success depends on having a clear plan and making sure everything we do fits with our company's bigger goals. Think of it like setting sail on a voyage of transformation, where we're not just upgrading technology; we're working towards a future where things run smoother and we're even more competitive.</p>
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