

IoT [Internet of Things]

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Abstract:

Internet of things is a technology evolving with powerful mode in various applications like medical, infrastructure, landscaping, architecture, educational etc. The communication through internet of things is becoming cheap and by having powerful sensors almost all applications becoming speed and executing with accuracy. IoT is compressed with several machines which can communicate with other machines in development of clear IT atmosphere, flawless infrastructure development like smart cities, effective water waste management and monitor cash flow management system.

Introduction:

Internet of things means a network which is operated daily to interact with external and internal mode of system like smart phones and tablets. Technology being developed and amended frequently .It is essential to get updated with latest technique to exchange data's there by reducing manual efforts and approaching towards perfection.

Recently technology is more precise in network, exchanging data, automation of machines through latest technology, full time efficiency is achieved by reducing unnecessary efforts. Sharing and storing information have become more convenient in doing higher level job which is meaningful and optimism. Each thing is uniquely identifiable through its embedded computing system.

IoT - Key Features

AI :Artificial intelligence algorithms, and IoT can makes virtually devices “smart” so that now these devices can gather data and can takes decisions by themselves

Sensors : IoT has changed the word with sensor ,now device are not remind the passive entities, these can work like active ,take decisions, can move ,can stop.

Connectivity: IoT provides the connectivity between devices through internet or basic types of net, so that they can work in connected environment.

IoT – Sensors

IoT sensors plays a major role in IoT devices, which works as measurement devices. It collects data and makes decisions based on that data. Here, list of some sensors and their usage

S.No	Devices	Usage
1	Humity sensors	Micro flow sensors
2	Magnetometers	Proximity sensors
3	Gyroscopes	Image sensors
4	Acoustic sensors	Light sensors
5	Accelerometers	Temperature sensors
6	Pressure sensors	Gas RFID sensors

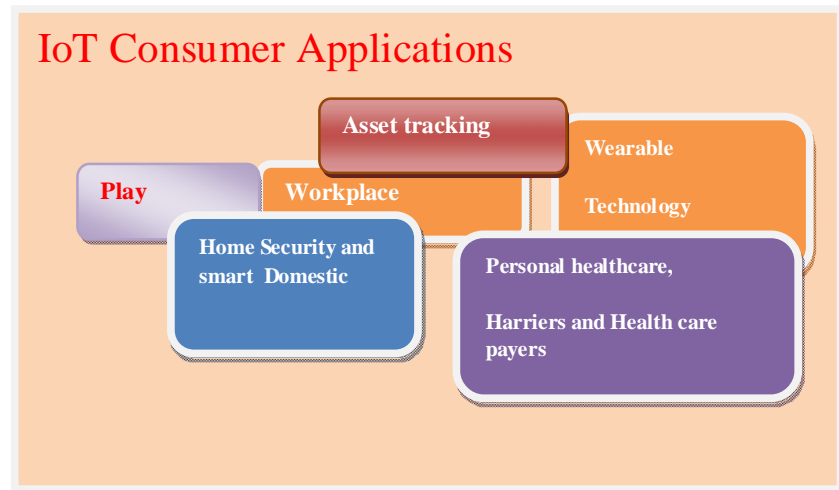
APPLICATIONS OF IOT

The extensive set of applications for IoT devices is often divided into

1. consumer
2. commercial
3. industrial
4. infrastructure spaces

1. Consumer applications

Consumer benefit personally and professionally from the optimization and data analysis of IOT. IoT technology acts like a team of personal assistants, advisors and security.



Asset tracking: In this modern era many companies are running with their assets as capital cost by pledging or other means of financial racisms. As it involves enormous money, it is evident to use network to showcase each and every nooks of assets. By having the data available transparently any business can run on safer path.

Workplace: By having IoT, more work places can be monitored. Human resources are best assets for any company to run economically & efficiently. IoT based system can be used for best lighting and cooling ambience to home without atmospheric inconvenience. Virtual meeting shall be useful for timely decision making.

Wearable Technology: Wearable technology is a device which is attached with micro controllers. Wearable devices such as electronics, sensors are effecting in exchanging data with perfective team for fine tuning and enhancement in improvement.

Personal healthcare: IoT can be used in personal health care to make effective way of monitoring human system. spotilness and other aliments patients can be analyzed and sorted art accordingly. By imbibing IoT, Causality like visiting to clinic regularly, optimum utilization of resources is achieved.

Home Security: IoT becoming best technology for homes especially in metropolitan cities, where thefts, home disasters and any abnormal situations at the range of IoT. By capturing the images, solutions / results can be achieved immediately.

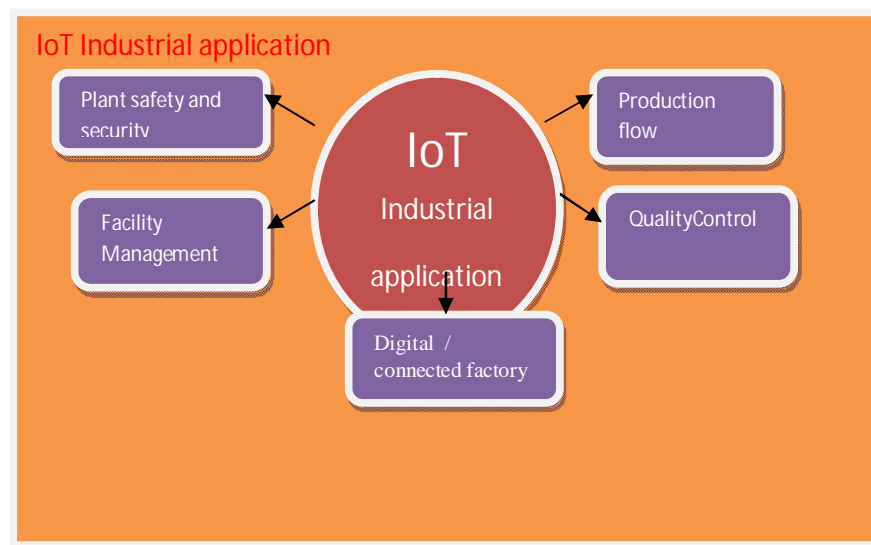
Smart homes: smart homes are in increasing spree on last decade because risk of homes in very less and security of home in high vision state. By embedding sensor and actuators facilitation of smart innovation for easy access to any situations with available data and best data exchange efficiency.

2 .Commercial applications

Medical and Healthcare: Rapid development of IoT in medical and health care leads to achieve in adopting best technologies for any diseases from diagnosis to therapeutics, and to complex surgery with ease. Mobile health is a field which contributes highly to critical medical situation and related treatment of an individual. It shall be of having apps in smart phones, is tracking health and remote patient monitoring.

Educational application: By applying IoT in educational many tasks can be achieved or learned with ease. IoT helps us to make education easily accessible to boundless. Geographical access, ability to take notes from any level of thesis. Cultures and languages of many countries can be studied by applying foreign language conversion apps. Innovative educational ideas along with IoT will lead to reforms in status quo and economic situation of any individuals.

3. Industrial applications:



Plant safety and security: plants are always vulnerable for injuries. Minor injured person will be treated and monitoring. Thereafter shall be useful using IoT. Security will be very effective using IoT to have immediate solution. Local problems, government meeting, public hearing about plant are useful.

Production flow monitoring: In earlier days when IoT not invented, production are done with manual methods wherein wastage, other factors are not exactly considered. Best with evolution of IoT monitoring of production with optimum usage of men, materials and machines are achieved without much wastage

Quality control: Any company can reach their full potential only when their produced product of good quality control. By feeding the standards / values /specifications of product at various stage using IoT can enable us to produce best quality product.

Facility Management: Facility Management, by using IoT always find ease in maintaining, supervising and repairing of a building. Facility management using latest mobile technologies, wireless sensors etc, can interact with tenant and owner and clear any kind of issues/ problems to create win-win situation. Only by serving and maintaining good relation any business can reach its potential. If a building equipped with IoT unauthorized entry or any mishappening can be identified and eradicated immediately.

Digital/ connected factor: Usage of IoT in industries / factories like networked sensors (or) intelligent devices or combination of both used in manufacturing sector. Sensors are attached to machines to gather data, storage and by updating with analytical technologies, manufacturing can be down towards full potential. Operating efficiency is improved to the greatest benefits. Finding out the machine conditions like break down or dangerous operation has become easy and replaced with new machines for proactiveness.

4. Infrastructure application

Economical and optimization of infrastructure construction is being achieved by using IoT in various fields. Geotechnical investigation will give guidance for effective foundation system of a building. Software used for design, planning and quality control, many costly and trial and error process have become obsolete by using IoT. Transportation and energy efficiency achieved through IoT. Thereby enormous wastage of fuel, cost saved, which each to growth of individual and the nation

Advantages of IoT:

Enhanced Data Collection: IoT has changed the way of data collection, now it makes this task more active with engagements of technology and human.

Improved Customer Engagement: Now IoT has changed technology, In any task with active technology and customers are getting more engaged which resulted improved customer engagement with technology

Reduced Waste: Improvement of technology through IoT has resulted better utilization and management of resources, so has reduced the waste.

Technology Optimization: IoT unlocks a world of critical functional; now technology is becoming part of the day to day life, which resulting optimized use of technology

Time saving: IoT Applications can provide personal assistants who can alarm on your everyday plans. It is a very time consuming, which means saves a lot of time by automating the task.

Disadvantages of IoT:

Privacy: In security issue, saving the personal data from hackers is also becoming big challenge, as use of IoT based devices is increasing.

Complexity: Systems made of recent technology based on IoT are sometimes become complicated in terms of design, maintenance and deployment

Security: IoT Devices can gather data, communicate and can share it over network through internet, so mostly data is now openly available for hackers, now it is creating issues in Data security.

Unemployment: The Automation of IoT will have a devastating impact on the employment prospect of less-educated workers. People who are working in lower level like Security guard, House servant, and laundry service may have lost their occupation.

Conclusion:

IoT is now become the powerful connector in the world. It has unlimited scope of executing advancement in technology for manufactures and consumers.

Future IoT will be implemented in robotics on many sectors Government will have best monitoring and mistakes arose without IoT will be nullified and can serve people much better.

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