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Role Of IOT in Computing Innovation

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ABSTRACT
The process of taking ordinary objects, equipping them with sensors and software, and merging them to the (world wide web) internet and other connected devices so that they may collect and exchange data without the need for human intervention is known as "Internet of Things". With the help of Internet of Things, Innovative applications and services have been made possible, which has completely changed the overall structure and arrangement of (computing) IT assets. Contribution of IOT in the field of Computing Innovation will be examined in this paper. We have taken a survey of 100 academics and IT professionals to understand and learn more about IoT adoption and its impact on computing innovation. With this finding we have observed that there are lot of issues in managing data, security issues and device interoperability issues while using iot.
Keywords**:**Surveys, IoT, security, uses and applications, Challenges.

INTRODUCTION

The innovative technology Internet of Things (IoT) takes everyday objects connecting them with internet and devices such as sensors allowing them to share, exchange, interact, and collect data without human interventions. With the help of Internet of Things, Innovative applications and services have been made possible which has broad implications for computer innovation. Iot applications leads to more automative industry by reduction in manual human interventions.

RESEARCH GAP:
It is very essential to have deeper insights and comprehensive understanding of iot applications with its functions, its uses, obstacles and problems, conceivable future paths, despite the Internet of Things' increasing significance in computing innovation.

OBJECTIVES:
Goals of this paper are as follows
1. To inspect, contribution of iot in the field of computing innovation.
2. To determine iot applications with its functions, its uses, obstacles and problems, conceivable future paths
3. To analyse IoT adoption amongst IT Professionals and how its effects.

LITERATURE REVIEW
IOT fully transmitting our working habits, living styles and collaboration process into automated world. The Internet of Things (IoT) makes it possible for physical objects, automobiles, household appliances, and other objects with sensors, software, and connectivity to be connected in order to gather and share data (Review by By Atzori et al., 2010). The contribution IoT in computer innovation is examined in this literature study, which also discusses with its functions, its uses, obstacles and problems, conceivable future paths

Applications of IoT in Innovative Computing:
There are several uses for IoT in computer innovation, such as:

Smart Cities and houses: It is possible to build smart cities, houses, where sensors and equipment such as devices are linked to provide effective public services, transportation, and energy management with the help of iot. (Review By Khan et al., 2012).
Healthcare: IoT improves patient outcomes and lowers healthcare costs by enabling telemedicine, tailored treatment, and remote health monitoring (By Yang et al., 2015).
Industrial Automation: The Internet of Things (IoT) makes it possible to build smart factories, which are networks of machines and devices that optimize production processes, save energy costs, and enhance product quality (By Gubbi et al., 2013).
Obstacles to IoT Adoption: In spite of its potential, there are a number of obstacles to IoT adoption, such as:
Security: Cyberattacks can compromise the privacy and security of data on IoT devices (By Kumar et al., 2019).
Interoperability: When IoT devices from various manufacturers are incompatible, it can impede smooth data transmission and communication (By Patel et al., 2016).
Data management: Effective data management systems are needed in order to handle, store, and analyse the massive volumes of data generated by IoT, effective data management systems are needed (By Yang et al., 2015).

1. **Survey Design:** A survey questionnaire was conducted and distributed to

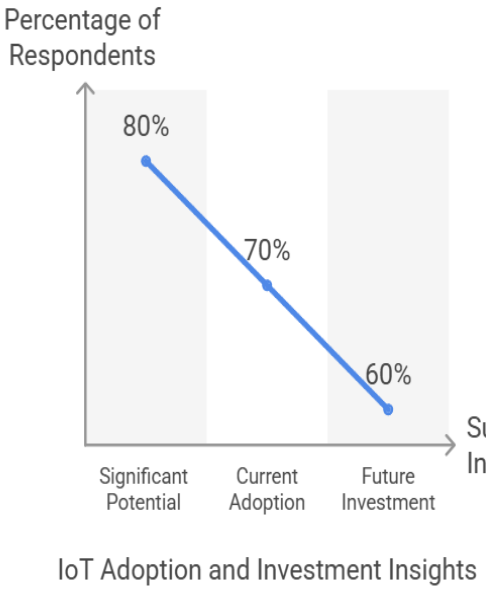
academics and IT professionals to know more about IoT adoption and its effects on computing innovation. Twenty questions were asked addressing IoT applications, difficulties, and future prospects made up the questionnaire.

2. **Data collection Methods:** One hundred academics and IT professionals took part in the online survey.
3. **Data Analysis:**To examine the resulting data of survey summarized data were used and results are displayed in the form of graphs and charts.

Following records are the final examined results of the survey data:

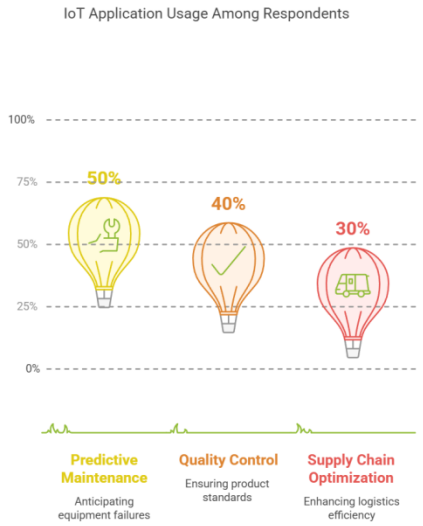
Adoption of IOT:

1. As per the survey results, 8 out of 10 (80%) of participants (IT Professionals) feels that IoT holds great possibilities for computer innovation.
2. In 70% (7 out of 10) of the respondents' companies IoT has been implemented.
3. 60% (6 out of 10) respondents shown interest to boost their investments in IoT in upcoming two years.



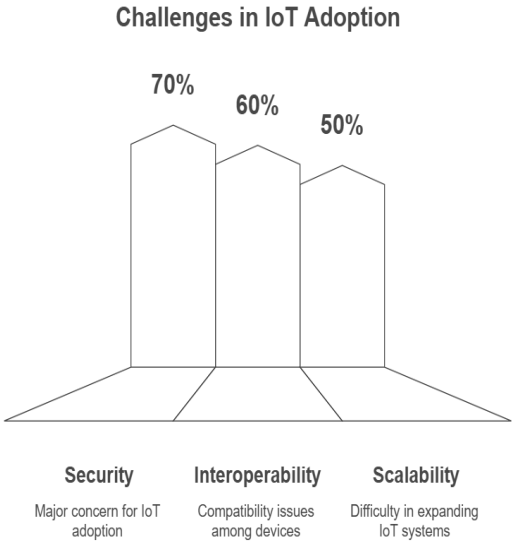
Use of Applications:

- As per the survey results (5 out of 10) 50% of participants promote IoT for predictive maintenance.
- 40% (4 out of 10) of responders uses IOT for quality assurance.
- 30% (4 out of 10) of respondents uses IOT to promote the retail chain.



Challenges in IOT

- As per the survey results (7 out of 10) 70% of participants believes that security is the major obstacle to IoT adoption.
- As per results 60% (6 out of 10) of respondents, interoperability is a major obstacle.
- 50% (5 out of 10) of participants believes that scalability is a problem.



FUTURE SCOPE:

IOT contributes in the field of computing innovations. It offers advanced technology and exciting opportunities for innovations but there are

number of issues such as security, interoperability and data management that needs to be handle.

1. developing strong and effective security mechanism.

2, To set up different secure communication protocols for Internet of Things apparatus.

3, To design a advanced data management systems for data generated by the Internet of Things.

CONCLUSION:

The internet of things has completely revolutionized the way we live, how we work and how we interact with each other by taking physical world things of our lives connecting them with The Internet and devices and sharing and exchange data through devices without human interventions. But there are lot of issues such as security, interpretability and data management that should be taken in care of by developing strong and effective security mechanism, by setting up different secure communication protocols for Internet of Things apparatus. In this study all the insightsinto the role of IoT in computer innovation are given.

REFERENCES:

[1] Atzori, L., Iera, A., & Morabito, G. (2010). The Internet of Things: A survey. Computer Networks, 54(15), 2787-2805.

[2] Gubbi, J., Buyya, R., Marusic, S., &Palaniswami, M. (2013). Internet of Things (IoT): A vision, architectural elements, and future directions. Future Generation Computer Systems, 29(7), 1645-1660.

[3] Khan, R., Khan, S. U., Zaheer, R., & Khan, S. (2012). Future internet: The Internet of Things architecture, possible applications and key challenges. Proceedings of the 10th International Conference on Frontiers of Information Technology, 257-260.

[4] Patel, P., & Patel, D. (2016). Internet of Things (IoT): A survey. International Journal of Advanced Research in Computer Science, 7(3), 441-449.

[5] (IEEE Access, 2020): - "Internet of Things (IoT) for Next-Generation Smart Systems: A Review" Explores the role of IoT in smart systems, highlighting challenges and opportunities.

[6] "Internet of Things: Current Research, Challenges, Trends and Applications": Discusses IoT research, enabling technologies, and applications in various industries.

[7]"Internet of Things (IoT): Research, Architectures and Applications": Provides an overview of IoT research, architectures, and applications, highlighting its potential and challenges [1] [3] [4].

[8] IEEE International Conference on IoT: A leading conference on IoT research, covering topics like IoT applications, security, and data analytics.

[9]International Conference on Internet of Things and Cloud Computing: Explores the intersection of IoT and cloud computing.

[10] Workshop on IoT and Smart Cities: Discusses IoT applications in smart cities, including transportation, energy, and healthcare [1] [2]