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**IOT in the INDUSTRIAL SECTOR**

The term IoT was originally proposed to refer to uniquely identifiable interactive connected objects using radio frequency identification (RFID) technology. The Industrial Internet of Things (IoT) allows many physical objects and devices around us to be connected to the Internet. There is increasing interest in the use of IoT technologies in various industries. The Internet of Things (IoT) is a dynamic global network infrastructure with self-configuration based on interoperable and standard communication protocols. IoT infrastructure will likely follow a phased approach and expand from existing identification techniques, such as RFID. IoT-related identification and tracking technologies include RFID systems, barcodes, and smart sensors for data exchange and intelligent communication. By integrating data obtained from smart sensors with RFID data, it is possible to create more robust IoT applications suitable for industrial environments. IoT involves many electronic devices, mobile devices, and industrial equipment. These can be connected using networking and communication technologies.

IoT in industries can be a major part of Industry 4.0. IoT harnesses the capabilities of intelligent machines and real-time analytics to make better use of the information industrial machines have been generating for years. IoT is used in a variety of industries ranging from manufacturing, logistics, oil and gas, transportation, mining, aviation, energy, and more. Its goal is to optimize operations, especially to automate processes and maintenance. IoT capabilities improve asset performance and better manage maintenance. In the long term, this moves the industry towards a demand-driven service model, increases customer intimacy, and creates new revenue streams, contributing to the digital transformation of industries. SOA has been successfully used in research fields such as cloud computing, WSN, and media networks. Jia and associates. and Domingo proposes to divide the IoT system architecture into three main layers: the perception layer, the network layer, and the service layer. SOA is considered a good approach to achieving interoperability between heterogeneous devices in many ways.

A gateway can be used to handle many complex aspects of network communication. There are several multilayer protocols for wireless networks such as Wireless Sensors and Actuators Networks (WSAN) or Ad Hoc Networks (AHN). The design of industrial IoT applications must take several goals into account. With the ubiquitous identification, detection, and communication capabilities of IoT, all objects in the healthcare system can be continuously tracked and monitored. Using personal computing devices (such as laptops, and mobile phones) and mobile internet access (such as WiFi, and 3G), IoT-based health services are portable and personalized chemicals. IoT will play an increasingly important role in transportation and logistics.

A lack of understanding of industry requirements on factors such as cost, security, privacy, and risk is needed before IoT is widely adopted. Developing network technologies and standards that allow data collected by large numbers of devices to move efficiently through IoT networks is a daunting task. The lack of a commonly accepted service description language makes it difficult to integrate physical object resources into value-added services.

The rapid growth of IoT makes standardization difficult. Standardization in IoT aims to improve the interoperability of different applications/systems and enable products or services to work better. Specific issues of IoT standardization include interoperability issues, radio access level issues, and security and privacy issues. Privacy protection in IoT environments becomes more serious than in traditional ICT environments because the number of attack vectors on IoT entities is much larger. Some issues, such as the definition of privacy and legal interpretation, are still vague and poorly defined in IoT. International collaborative efforts and systems-level perspectives are needed to address the IoT-related challenges above. There is a strong interest in using social networks to improve communication between different IoT objects.

Healthcare has been accepting smart devices for a long time. Healthcare professionals can monitor patients remotely and be alerted of any status changes. It makes healthcare more precise and private. In the future, computers may also be ready to aid in the diagnosis, allowing doctors to treat patients more accurately and efficiently. FSC is highly distributed and complex, and IoT technologies offer the promising potential to address traceability, visibility, and controllability challenges. The Food-IoT solution consists of three parts: field equipment, backend systems, and communication infrastructure. IEEE Transactions on the Industrial Internet of Things (IoT) Vol. 10, No. 4, November 2014 is strongly concerned with the deployment of IoT devices to develop industrial applications such as monitoring, control, management, etc. automatic management, and maintenance. We first present the IoT SOA platform and models and then discuss the underlying technologies that can be used in IoT.

In short. This article reviews recent research on the topic of IoT from a professional industry perspective and discusses underlying technologies that are and are likely to be used inside and outside the industry. It also analyzes and clarifies future research challenges and trends related to IoT. The insights and information provided are also very interactive as they are concise and to the point. Anyone in the IoT industry (from hobbyists to professionals) will definitely benefit from reading the article.

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