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| Date: | **11-07-2020** | Name: | **Varun G Shetty** |
| Course: | **Introduction to Internet of Things** | USN: | **4AL17EC093** |
| Topic: | **Educational and Business opportunities** | Semester & Section: | **6th & ‘B’** |
| GitHub Repository: | **Varunshetty4** |  |  |

**Report-**

Challenges in the digitized world: The IoT provides many benefits but at the same time it presents many challenges. Since the IoT is a transformational technology, we are now faced with an ever expanding collection of new technology that we must master. The IoT is changing every aspect of our lives.

This is not the first time we have experienced a technological development that has such an impact. Mechanization on the farm allowed increased productivity of available farmland and started the migration of the population from rural to urban areas. The development of the automobile allowed for greater mobility of the workforce and increased recreational activities.

The personal computer allowed the automation of many routine tasks with improved accuracy and efficiency. The Internet started to break down geographic barriers and improve equality between people on a global scale. These are only a few of the transformational technologies that we have experienced in recent history. Every one of these technologies presented major changes to an established society and was met with initial fear and apprehension.

After the initial fear of the unknown was overcome and the technology was embraced, the inherent benefits became obvious. Each perceived challenge opens up many new opportunities. community of interest A community of interest is a group of people who share a common interest or passion about a specific topic. These people get together to share information and ideas about this topic.

This shared interest allows the group to develop into a true community. Members of these communities are extremely knowledgeable and passionate about the topic being discussed and are willing to share their knowledge with other community members. This makes the community an excellent resource for the development of the area of interest.

The Internet allows these communities to exist virtually and span several geographic areas and time zones. Members can share files and technology in real time. Some communities

are supported by industry and provide a place to help development of their products and technology, as well as those of their business partners. Two such communities provided by Cisco are the Cisco Learning Network and Cisco DevNet.

The Cisco Learning Network is a collection of resources, information, and discussion forums. It is designed for people who wish to develop their skills in various Cisco technologies and pursue Cisco certification. To see what the Cisco Learning Network has to offer and to become a member, visit their website at learningnetwork.cisco.com. When looking for a degree to pursue at a community college or university that will pertain to the skillsets needed for a career in the IoT, watch for some of the following degrees:

• Business Intelligence

• Computer Information Systems

• Computer Programming

• Computer Science

• Database Administration

• Electromechanical Automation

• Electronics Engineering

• Linux Networking

• Machining

• Network Administration

• System Analysis

• Web Server Administrator

This is not an exhaustive list. Even traditional degree programs such as supply chain management, business, and project management are helpful for careers in IoT. Computer-Aided Design (CAD), drafting, math, and physics are applicable and show a diverse education, which is perfect for an IoT career. IT, opportunities may be specific to fog computing, developing new processes, or a specialization in a discipline that has not yet been realized.

These jobs reflect skills spanning multiple disciplines that include computer science, computer engineering (a blend of computer science and electrical engineering), and software engineering. There are broad categories that summarize the job opportunities that exist in the evolving digitized world:

• Enablers– These jobs develop and implement the underlying technology.

• Engagers–These jobs design, create, integrate, and deliver IoT services to customers.

• Enhancers– These jobs devise their own value-added services, on top of the services provided by Engagers, which are unique to the Internet of Things.

An entrepreneurial workforce is needed that specializes in both information science and software or computer engineering. The Cisco Networking Academy Program has trained more than five million students to date. Many graduates have gone on to successful IT careers in a variety of industries, while others have harnessed the entrepreneurial spirit and knowledge they acquired to start their own businesses and create new jobs.

Go to [www.netacad.com](http://www.netacad.com) to see the variety of courses offered. There are two basic types of certification available: vendor-specific and vendor-neutral. Vendor-specific certifications are tailored to technologies offered by a company to prove that an individual is qualified to deploy and manage that technology. Vendor-neutral certifications are offered by many different organizations. Certifications can show an employer that an individual has the appropriate skills for a job. Community college or university degrees can show that a person has gained a broad understanding in a field of study. This broad understanding creates a solid foundation for emerging career opportunities in the IoT.