**ECPI University**

Lab Unit 2

**"Internet of Things”**

**CIS 142**

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**Introduction**

With all the growing innovation in the technology field after the invention of the internet, topics such as: Cloud Computing, Big data analytics, Virtual Reality & Artificial Intelligence; we are starting to see more and more devices being connected to the internet. This concept of connecting more and more devices into the Internet came to be known as “The Internet of Things.” IoT is becoming an increasingly growing topic brought into the discussions of IT Researchers. Conferences are being held world-wide to prepare people to the rapidly changing world with the growing number of new technologies. These talks have spiked the interest of many companies to constantly achieve newer technical advances. In addition to technical advances, the world is also introduced to greater technology risks; increasing the demand for cyber network security professionals.

**Explaining the IoT**

According to a blog written in Forbes: “A Simple Explanation of The IoT,” currently 4.9 Billion devices are connected to the Internet **(Morgan, 2014)**. This number is believed to grow to 26 Billion by 2020, according to Gartner of an analyst firm **(Morgan, 2014)**. This growing number is not only the number of devices but also the versatility. The type of devices that has established a permanent residence inside the internet domain range from: ATM machines & computers to mobile devices, mobile watches, televisions **(Morgan, 2014)**. In addition, for the future, expected to include: cars, toasters, refrigerators, alarms, washing machines, coffee makers, lamps, wearable devices & potentially, everything possible **(Morgan, 2014)**. With the potential for integration, experts envision a world where technology is able to automate our daily tasks, such as: syncing your calendar to monitor a person waking up in the morning; sending messages to colleagues to keep update of information; to also, making your morning coffee & starting your car, automatically, driving you to your destination using the best route **(Morgan, 2014)**.

**Purpose of IoT, why are we are doing this?**

So, what is all the hype about devices moving to the internet and what is the big deal? According to Daniel Burrus of the Burrus Research, he claims: ‘When people talk about the next big thing, they’re never thinking big enough.’ Daniel Burrus is pointing out the fact that we simply do not see the potential of smart devices. When mobile devices became able to support an operating system and became a smart device, what was the big whoop then? Today we see the results of that innovation that quickly took over the market. Smart phones became a piece of technology that is irreplaceable in people's lives because of the number of tasks that is made simple. Intelligent phones gave accessibility of information, worldwide, in the palm of one’s hands. In a similar way, Mr. Burrus believes that we simply cannot imagine the effect that other devices will have on our lives when integrating with computer intelligence. I, personally, believe integrating smart technology will help us in a number of ways; including reducing costs of operation for everyday devices. Pretty interesting but this is probably a common thought in many peoples’ mind, Mr. Burrus has something bigger in mind; he introduces machine to machine learning. Machine to machine learning will be able to communicate data and build analogical relationship to data, which will be integrated into centralized cloud technologies **(Burrus, 2018)**. So, let us imagine a world where every piece of device integrated with smart technology will collect large amounts of data into the cloud, constantly being analyzed with AI technologies. It sounds like humanity has opened a pandoras box with the coming technological revolution. So, are we building sky-net and the potential destruction of mankind?

**Backlash of Innovation & Challenges**

There is still a lot of work to do and with great power comes great responsibilities. With the rise of internet driven smart devices, will create a rise of technology professionals & technology geniuses. So yes, people with less technical knowledge will be exposed to new technology related vulnerabilities. Matter of fact, AT&T business expects Cybercrime damage costs to hit $6 trillion annually by 2021, about 458% increase. This incredibly large number require expert professionals protect and develop the new revolutionary world. Steve Morgan published in CSO, IDG news: “cybersecurity labor is expected to hit 3.5 million unfilled jobs by 2021.” **(Morgan, 2017).** Currently there are 209,000 job openings for cybersecurity **(Morgan, 2017).** The National Association of Software and Services companies estimated that India alone will need 1 million cybersecurity professionals by 2020 **(Morgan, 2017)**. Also, according to Cybersecurity Jobs Report of 2017, “Every IT position is also a cybersecurity position now.” **(Morgan, 2017)**.

**Conclusion**

In summary, the ‘Internet of all Things’ is becoming a big hype in discussion with Technology researchers, professionals and enthusiasts. Experts believe that all form of technology will be a part of the internet in the near future. Technology connected to the internet will be able to monitor and collect large data that will be integrated with automation and AI driven technologies. With the growth of technologies moving into the internet, experts expect to see new cyber-crime emerge creating a large demand for cyber-security professionals in the market.

**References**

**(1)** Morgan, Jacob.(2014). *A Simple Explanation Of ‘The Internet Of Things’*. Retrieved From: <https://www.forbes.com/sites/jacobmorgan/2014/05/13/simple-explanation-internet-things-that-anyone-can-understand/#62add3d61d09>

**(2)** Burrus, Daniel. (2018). *The Internet Of Things Is Far Bigger Than Anyone Realizes.* Retrieved From: <https://www.wired.com/insights/2014/11/the-internet-of-things-bigger/>

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**(4)** Morgan, Steve. (2017). *Cybersecurity Labor Crunch to Hit 3.5 Million Unfilled Jobs by 2021.* Retrieved from: <https://www.csoonline.com/article/3200024/security/cybersecurity-labor-crunch-to-hit-35-million-unfilled-jobs-by-2021.html>