Sheridan College

Internet Writings

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As an initial assignment I have spent time examining the videos which are titled below. The content is amazingly informative in the sense that they are able to help build upon a concept in which we are all familiar. We are introduced to ideas such as the mesh network, undersea cabling, and, IoT devices. The brief history, construction, and the promise for future technology helps shape an overall understanding of what we use every day.

– What is the internet? –

The video begins by searching to define the internet, and then establishing a brief history of the work done between Vint Cerf, and Bob Khan. Starting in the early 1970s, their work ended up being the result of another experiment done by Paul Baran on ARPANET’s communication network. Baran was looking to mitigate damage done to their communications, in case there was ever a foreign attack at home. This was because it was a Department of Defense project with telecommunications as its main focus. As a result, he ventured into the use of a distributed network, as opposed to a centralized one.

Baran’s network looked to distribute data in smaller packets, and across a mesh network, in case there were any damage done to the lines. The data packets would follow random routes all across the network, and then reunite at its destination address. Where a centralized network would normally fail, Baran’s network would sustain losing a few nodes. Using this as a foundation, Cerf, and Khan were able create a nation-wide mesh network across the United States.

Due to its massive growth, the internet works primarily through independently operated networks with the sole goal being, interconnectivity. The importance of the expanding, fully distributed system, is stressed as we face the reality that genuine human progress has always gone hand in hand with the research built off of those around us. It’s made clear that the internet is a phenomenon unlike any created before, and its application and growth are virtually infinite.

– Andrew Blum: Discover the physical side of the internet –

In order for us to follow and understand his train of thought, Andrew Blum shares with us a background of his career as an architect. He paints the parallel between our physical and virtual worlds as a separate plane of existence that we could only ever peer into, but never actually touch. The journey he takes us on is filled with an emphasis on the physical and the untouchable. Blum endeavors to follow the physical link that connects his home to the rest of the world and with that journey comes a number of wonderful facts about how we are all interconnected.

He goes on to explain that there are a few buildings around the world which are considered major hubs in our international network. Not only do they house a huge amount of the national infrastructure; but they are also the building in which the long undersea internet cables are fed into. The explanations are wonderfully simple and help the viewers envision the lines running across the world connecting us all.

One of the major takeaways returns us to the point of the physical world vs. the virtual world. Except now we have been exposed to the network we never knew about. Now it is obvious that what we enjoy as the internet does not simply manifest itself. It is a fact that the internet is actually a luxury which was built like any road or infrastructure conceived before it. This also involves maintaining, and investing in its expansion.

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– What is the Internet of Things (IoT) –

The Internet of Things can be summarized as any network connected device that is able to transmit its data out and back to its server. Though the concept itself is relatively simple in theory, the real-world application has been globally impactful. The technology has allowed innovation given the fact that it’s possible to be used as a sensor in order to collect valuable data. From there, one is able to make decisions or collect the data to be analyzed as necessary.

The technology has solved a great deal of issues with its ability to sustain battery (with standby and intermittent checks) and collect data, thus making it a huge commercial success. It can be considered a privacy and security risk given the nature of its implementation, meaning one should be wary of its massive adoption. All in all, the technology does its job perfectly.

The potential of a massive market has some companies pushing the release of specially made operating systems to help the devices more programmable. The device itself usually does not connect to the internet and is made of a simple sensor that transmits information to an IoT gateway. The gateway device sends the info the server which then execute whatever purpose. We are reminded in the end that devices connected to the internet, while good, are also a vulnerability should there ever be bad actors involved.

Overall, I come to understand that we continue to build on the concepts and infrastructure that came before us. The videos are very clear in their meaning and I am sure it is obvious that they have much more to offer than the word count we are limited to. I leave thankful to have had the chance to learn from them.

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References:

What is the Internet? <(https://youtu.be/Dxcc6ycZ73M)>

Andrew Blum: Discover the physical side of the internet

<(https://www.ted.com/talks/andrew_blum_what_is_the_internet_really)>

What is the Internet of Things (IoT)? [(https://youtu.be/S64s3GrZlSM)](https://youtu.be/S64s3GrZlSM)

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