



## IOT

## The Internet of (Creepy) Things

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**B**ack in 2007, I first heard about a fascinating technology that claimed to connect every device and object on earth in real time. I remember thinking, why would humans want to do that anyway? I know the bible predicts the digital/ human connection in Revelation 13 which is really disturbing enough, but what is the “Internet of Things”? And what follows that? We are going to answer all that and more.

But first a question: How many centuries did people live without electricity, mass transportation, mass communication, biometric identification? Answer: all of them.

Until that last one of course, the one with all the wars and blood and stuff. Doesn't the Bible say that in the last days 'knowledge shall increase'? Yes it does, it is one of the major signs of the end times, and probably easiest to 'prove', as if the Bible needs any proving by the likes of me and you. But that word “increase” means EXPONENTIAL. It is a mathematical term.

But here we are, on this end of so many inventions, gadgets, bells and whistles, noise and insanity, one has to wonder if this increase in knowledge is the one that will drive us all mad in the end.

Way back in 1875, a gentleman named Herman Hollerith studied engineering at Columbia University. Upon his graduation, Mr. Hollerith took a job with the US Census Bureau in 1880. At that time, America was growing rapidly and the government felt that for the next census, there was a great need for someone to come up with a solution to analyzing the large amounts of data that the US wanted

to collect on it's growing population. So, collecting data on Americans is not exactly new, it has just become very advanced.

The government soon realized that with all the new immigrants, it could easily take longer to count everyone by hand than the actual 10 years between each national census. So, they held a contest to see what the bright minds of the day could come up with. While Herman was a professor at MIT in 1882, he began experimenting with what we call a 'punch card' type of system for analyzing data.

The cards were known as "Hollerith Cards". When fed into a card-reading machine, they could tabulate and record such data as name, number of children, address, country of origin, etc. Very basic info - but I think these were used well into the 70s if I recall my office classes correctly in High School. My life has spanned the low tech and high tech so I have seen and used every imaginable device that was touted as "cutting edge", leading right up to and far past my 1993 Windows 3.1 machine.

They were used in the 1890 Census which took only 1 year to complete, an amazing feat for the time; they were also used at Ellis Island to record information on each immigrant as well - greatly speeding up the process of blending 8 million new citizens into the American landscape. His Hollerith Cards and calculating machines became the foundation for The Computer Tabulating and Recording Company in 1911, renamed "International Business Machines" or IBM, in 1924.

Hollerith is regarded as the father of modern automatic computation, and many decades later, we have computer chips in wristwatches that are more powerful than the ones that sent men to the moon. I must admit that baffles me a bit, probably because we are so accustomed to thinking we need computers for every little thing, and sending men into orbit is probably one of the more difficult things to accomplish on any given day!

But now with a company like IBM part of corporate America, never mind that they used this technology to round up the Jews and place them in concentration camps, largely and conveniently forgotten in the digital age but IBM would never use such tech 2024 style to try it out on a new population, would they?

## **Accidental Pioneer**

Kevin Ashton was working for Proctor & Gamble in Europe in 1997 marketing things like Oil of Olay and their new line of lipstick. He found the marketing part pretty easy, as people were already aware of the brand name – but he soon found

that the problem of keeping a certain very popular shade of lipstick on the shelf brought a completely different challenge.

His research for a method of supply-line tracking took him into the world of RFID, or 'radio frequency identification'. RFID technology was already being used for things like cashless highway toll collection and remote starters for cars, but was not being applied in the vast world of buying and selling. The marriage of the computer with radio waves was about to become reality. And RFID is still with us, hardly an outdated technology; they are very affordable and reliable sensors. My Passport has an RFID chip. It probably knows more about where my passport is located than I do. What did I do with that thing?

RFID tags are made up of a tiny microchip with a flat coiled antenna. A special reader is then used to send radio waves to the tag, and the chip beams back the information that was programmed into it. By now everyone is familiar with the bar code ID system. I remember when those things started showing up on everything in sight, before 1980 I had never seen one. But it appears that radio-frequency tags are poised to take over and also take buying and selling to a whole new level, which I will get into later.

But here is the application part of the technology: placing these RFID chips into or onto every single item bought and sold in the world. Just think for a second about all the goods manufactured and sold in this world, and the task of identifying them with a chip - that alone is mind-boggling - but take it even further - the chips be incorporated into nails, beads, wires, fibers, or even painted pictures or words - eventually even the period at the end of a sentence. This gives a whole new and frightening meaning to surveillance and brings up serious privacy issues. Could our Bibles one day be chipped unbeknownst to ourselves?

And so our guy Kevin from P&G came up with something called the “**Internet of Things**” so that the internet, far more vast than anything we use it for on any given day, can keep track of every single item humans use from the time it is manufactured until it's expiration.

The definition of the IoT:

*A network of physical devices, machines and other objects that use sensors and software to collect data and exchange it over the internet, enabling remote monitoring and control.*

These chips make it possible to keep info on, and *track* every single item and part, and its owner, for its entire lifetime.

Imagine what that means for your vehicle and every part on it, for instance, or the food you buy, or your clothing, to be communicating with computers on this hidden internet. This has been building for years, but here's where it really comes to life. When I started to research this, it was in its infancy as RFID tags began to show up on big ticket items like TVs, at big box stores.

According to an article in Forbes magazine,

“An ever-growing number of them will not be simply part of computers or smartphones – as everything from toothbrushes to heavy industrial machinery is brought online. Increasingly, they will be smart devices augmented with artificial intelligence (AI) and capable of making autonomous decisions. By the end of 2024, there are projected to be more than 207 billion devices connected to the worldwide network of tools, toys, devices and appliances that make up the Internet of Things (IoT).”

**RFID chips** can be put into your shoes, your jeans, your tires, your meds, your work uniform, any of your groceries - and be completely undetectable until a reader activates it. And this is exactly what influential people in retail envision for our future. And this part you already know: these very same chips can also be implanted into humans or put into tattoo ink just in case you need a mark on your hand or forehead. But items being trucked around the country can be tracked, they can have temperature controls, weather alerts, there is no end to what they can do for every imaginable product and industry.

These types of chips are also in smart appliances, doorbell cameras, and pretty much anything that you use an app for.

Now this is where it gets kind of creepy for me, “creepy” being a relative term at this point: now inanimate objects have the ability to communicate with manufacturers, retailers, or each other. Of course we now live in the age of artificial intelligence where devices are starting to understand the physical world around them, and thinking independently so the IoT can be run without human input.

A Bible with a chip in it would just tell the computer that the Bible was in the room, and with whom, or that a can of Coke was in the room, or any one of thousands of other items.

With RFID, each tagged item could have a unique identifying number not even shared with items similar to itself. This sensor technology has a unique numbering system that is so vast it could number every item produced on earth for the next 1000 years - *with no repeats*.

After much research, they came up with a 96-bit code for numbering. Technically, that is 2 to the 96<sup>th</sup> power, and suffice it to say, it is enough to number 80 thousand trillion trillion objects. It would only take a 33 bit system to number 6 billion humans, so this system is more than adequate to take global finance, and trafficking in humans, to a whole new level. The IOT then, is a network of physical objects that are embedded with sensors, software and tags for the purpose of connecting and exchanging data with other devices and systems over the internet. And these things talk to each other.

By 2025, experts expect that over 20 billion every day objects will be connected this way.

MIT tells us that each individual tagged item has its own webpage with the history of the item's existence. Instead of domain names, it will be the name of an object. There will be no limit to the amount of info that could be stored this way - which is mind-boggling in itself.

What started out as a quiet research project at MIT in 1999 has exploded into a global corporate endeavor and a new global standard for item identification, they have passed control of the chips over to the Uniform Code Council, the company that manages the entire bar code system.

So since 2009 or so, the internet of things has been functioning. Let's add another tech layer on top of that.

## **The Internet of Bodies**

What in the world is that? An article in Forbes Magazine called, "What is the Internet of Bodies and How is it Changing our World?" Really captures the essence of this technology.

<https://www.forbes.com/sites/bernardmarr/2019/12/06/what-is-the-internet-of-bodies-and-how-is-it-changing-our-world/>

*"Have you heard the term the Internet of Bodies (IoB)? That may conjure up a few thoughts that have nothing to do with the true nature of the term, but it's about using the human body as the latest data platform. At first, this concept seems quite **creepy**, but then when you realize the possibilities it creates, it becomes quite exciting. Here we explore what the Internet of Bodies is, some examples in use today, and a few of the challenges it presents."*

*Simply, when the Internet of Things (IoT) connects with your body, the result is the Internet of Bodies (IoB). The Internet of Bodies (IoB) is an extension of the IoT and basically connects the human body to a network through devices that are ingested, implanted, or connected to the body in some way. Once connected, data can be exchanged, and the body and device can be remotely monitored and controlled.*

They go on to explain that there are three generations of Internet of Bodies that include:

**Body external:** These are wearable devices such as Apple Watches or Fitbits that can monitor our health.

**Body internal:** These include pacemakers, cochlear implants, and digital pills that go inside our bodies to monitor or control various aspects of our health.

**Body embedded:** The third generation of the Internet of Bodies is embedded technology where technology and the human body are melded together and have a real-time connection to a remote machine.

The article tells us that the most recognized example of the IoB is a defibrillator or pacemaker. In 2013, former United States Vice President Dick Cheney got his WiFi-connected defibrillator replaced with one without WiFi capacity. It was feared that he could be assassinated by electric shock if a rogue agent hacked the device.

A “smart pill” is another IoB device. These pills have edible electronic sensors and can collect data from our organs and then send it to a remote device connected to the internet. The first digital chemotherapy pill is now in use that combines chemotherapy drugs with a sensor that captures, records, and shares information with healthcare providers.

“Smart contact lenses” are being developed that integrate sensors and chips that can monitor health diagnostics based on information from the eye and eye fluid. Can it tell what we are looking at? Now that’s creepy.

Taking it up a notch is the Brain Computer Interface (BCI), where a person's brain is actually merged with an external device for monitoring and controlling in real-time. Elon Musk’s Neural-Link comes to mind.

A Bioengineering company, Biohax, has embedded chips in more than 4,000 people primarily for convenience. People can have an RFID microchip the size of a large grain of rice implanted that allows them to gain access to their place of employment without a key, pay for items with a wave of their hand at the vending

machine by deducting the amount immediately from their account rather than use money and log onto their computers.

Again, don't expect to be able to wrap your head around this but the next thing in this digital dance could very well go like this:

This *Internet of Things* gets combined with the Blockchain technology, a crypto ledger used for tracking global Bitcoin/CBDC transactions: *Internet of Everything*, meet *Ledger of Everything*. Together they would be able to form a seamless global network in which every person, transaction, event, item, crop, animal, interaction and change on earth is registered and accounted for in real time, all the time. Everything going on on the planet can be potentially known/recorded with this blockchain technology. And no, you couldn't get off this grid so forget that idea entirely. And if someone wants to cut off your buying and selling, they can just cut off your internet access if you don't go along with the new "everything of everything".

This global record of transactions is not hackable or alterable, and it cannot be shut down. (It reminds me of a sci-fi movie in which all the humans are gone, and the camera pans to the one thing still going at the end of the movie: the computer with it's beeps, blips, and blinking lights.) It's **beyond** creepy, really.

This combination provides an unfathomable amount of monetary and tracking power for a global authority to preside over. Infinite data from infinite devices, programmed to basically monitor and control every aspect of life.

Ready or not, needed or not, it's here.

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