Mohawk Valley Personal Computer User Group, Inc. explorer

PO Box 586 • Marcy, NY 13403-0586

2016   **WWW.MVPCUG.COM**   **May**

Internet of Things (IoT)

Posted by: Margaret Rouse IoT Agenda | Contributor(s): Ivy Wigmore. Jerry Grega will be discussing the Internet of Things. Read below for some insight.

The Internet of Things (IoT) is a system of interrelated computing devices, mechanical and digital machines, objects, animals or people that are provided with unique identifiers and the ability to transfer data over a network without requiring human-to-human or human-to-computer interaction. A thing, in the Internet of Things, can be a person with a heart monitor implant, a farm animal with a biochip transponder, an automobile that has built-in sensors to alert the driver when tire pressure is low -- or any other natural or man-made object that can be assigned an IP address and provided with the ability to transfer data over a network. IoT has evolved from the convergence of wireless technologies, micro-electromechanical systems (MEMS), microservices and the Internet. The convergence has helped tear down the silo walls between operational technology (OT) and information technology (IT), allowing unstructured machine-generated data to be analyzed for insights that will drive improvements.

Kevin Ashton, cofounder and executive director of the Auto-ID Center at MIT, first mentioned the Internet of Things in a presentation he made to Procter & Gamble in 1999. Here's how Ashton explains the potential of the Internet of Things:

"Today computers -- and, therefore, the Internet -- are almost wholly dependent on human beings for information. Nearly all of the roughly 50 petabytes (a petabyte is 1,024 terabytes) of data available on the Internet were first captured and created by human beings by typing, pressing a record button, taking a digital picture or scanning a bar code.

The problem is, people have limited time, attention and accuracy -- all of which means they are not very good at capturing data about things in the real world. If we had computers that knew everything there was to know about things -- using data they gathered without any help from us -- we would be able to track and count everything and greatly reduce waste, loss and cost. We would know when things needed replacing, repairing or recalling and whether they were fresh or past their best." IPv6's huge increase in address space is an important factor in the development of the Internet of Things. According to Steve Leibson, who identifies himself as "occasional docent at the Computer History Museum," the address space expansion means that we could "assign an IPV6 address to every atom on the surface of the earth, and still have enough addresses left to do another 100+ earths." In other words, humans could easily assign an IP address to every "thing" on the planet. An increase in the number of smart nodes, as well as the amount of upstream data the nodes generate, is expected to raise new concerns about data privacy, data sovereignty and security. Practical applications of IoT technology can be found in many industries today, including precision agriculture, building management, healthcare, energy and transportation.

Although the concept wasn't named until 1999, the Internet of Things has been in development for decades. The first Internet appliance, for example, was a Coke machine at Carnegie Melon University in the early 1980s. The programmers could connect to the machine over the Internet, check the status of the machine and determine whether or not there would be a cold drink awaiting them, should they decide to make the trip down to the machine. Dr. John Barrett explains the Internet of Things in his TED talk: See also: ubiquitous computing, Internet of Things security (IoT security).

Tuesday, May 3, 2016 — 6 - 8:30 PM
New Hartford Public Library
Meeting Open to the Public — Free — Bring a friend

MINUTES

The MVPCUG General Meeting was held Parkway Recreation Center, Utica, NY.

BUSINESS MEETING

President Jerry Grega with 17 Members in attendance, called the meeting to order at 6:00 PM on April 05, 2016.

The Treasurer's Report was presented by Bill Gorrell for the period of 02/01/2016 to 03/31/2016. Details are available from Bill G. or the Secretary.

There were no announcements or old business.

PROGRAM

Charleen Pernat was the speaker, on the topic of why you need a smart phone. The Apple IPhone, iPad, iWatch were discussed.

DOOR PRIZES
[furnished with club funds]
Mouse …......…………………………….. ...…Stu Culp
20 pens ......……………………… Howard Netzband
32 GB SD Card……...…...……………… Don Pianka
4 PaperMate Pens...................................Tony Ciancio
3 Pens…………...…………………… Bill Gorrell

[Donated by Rod St. Clair]
CD Cases .... Stu Culp

[Donated by Don Pianka]
Photo Paper………………………… Bo Wozniak
Photo Paper………………………… Gary Virkler

The meeting was adjourned by Jerry Grega at 8:00 PM.

Respectfully,
Bill Gorrell, Treasurer

Surfin' the 'Net
— John Hunter

Big brother is alive and well at the CIA. The website Common Dreams recently published a report about CIA activities that should bother many Americans. The CIA has been investing in companies that monitor, collect and analyze social media platforms such as Twitter, Facebook and Instagram. The CIA names this operation In-Q-Tel which funds companies to report such findings to the agency. To read more about this surveillance, visit http://www.commondreams.org/news/2016/04/15/revealed-cia-funding-companies-specialize-social-media-spying. I always believed that the CIA was prohibited from conducting operations against US citizens in the US. The ACLU is aware of these activities and is concerned enough to monitor the agency activity. I don't buy the argument that if you have nothing to hide, you don't have to worry. What about First Amendment privacy protections?

NASA Pictures
NASA recently released photographs taken by crew members on the International Space Station. The most recent picture shows Chicago at night in all its electric light splendor. To see the picture click on http://www.nasa.gov/image-feature/night-image-of-chicago. This is really spectacular.

Water Safety Compromised
First it was Flint, Michigan. Then it was Hoosick Falls, New York. Pollution of public water supplies is more common than previously thought. The Nation Magazine reported that the EPA is now investigating an area of Wyoming that appears to have polluted groundwater due to hydraulic fracturing. Pavillion, Wyoming is a small town surrounded by 1000 gas wells that have been fracked by toxic chemicals to release natural gas trapped in the subsurface sandstone. Unfortunately, the EPA lost its nerve and once carcinogen contaminants were found, passed further action on to state agencies to pursue. To read more about this situation, click on https://www.thenation.com/article/lead-isnt-the-only-threat-to-drinking-water/.

Public Pressure Makes Positive Waves
Www.takepart.com recently reported that the chemical company, Ortho, will phase out production and distribution of neonicotinoids in its products by 2021. Neonicotinoids have been linked to the death of bees and bee colonies throughout the world. And; since bees provide the pollination for many food crops; bee colony collapses are serious matters. Anyone interested in learning about civic action should visit http://www.takepart.com/article/2016/04/12/ortho-phase-out-neonics?cmpid=tpdaily-eml-2016-04-12. As Margaret Mead once observed, "Never underestimate the power of a small group of committed individuals to create change."

Siri May Go to War with Troops
Problem: how do combat troops handle technology and fight at the same time? The Army proposes to outfit combat troops with technology simpler to use. For example, a soldier in the field does not have time to type in a 10 digit ID and insert a smartcard into a device to prove he is not a hacker. The solution? Develop voice activated software that soldiers can use in battlefield situations. To learn more about military technology, click on http://www.nextgov.com/cybersecurity/2016/04/army-testing-talk-start-computers-war-zones/127359/?oref=nextgov_today_nl.

Cannabis for the Hip Cook
Cutting edge foodies now consider cannabis a new and exotic ingredient for gourmet dishes. New York City chef, Michael Cirino, teaches classes at the Brooklyn Kitchen in adding pot to the pot. The new twist uses a cannabis alcohol infusion. A visit to Food and Wine reveals the howtos of this new cooking idea. The website also provides ideas to add flavor dimensions to almost any dish. To read more about cooking with pot, surf over to http://www.foodandwine.com/fwx/food/what-avoid-when-cooking-cannabis?xid=NL_FWx041216TipsForCooking. An earlier post highlighted a Canadian company that produces and markets cannabis infused Nutella. This product creates a new dimension to the Nutella and Fluff sandwich. Let's hope the kids don't find out about it.

Visit New York City and Eat Your Way Around Ethnic Neighborhoods
A trendy website aimed primarily at women, www.purewow.com, recently posted an article about where to find great ethnic food in the boroughs. For Argentinian food, truck on over to Elmhurst, Queens. For Caribbean food take the subway to Crown Heights in Brooklyn. Indian food is found in Manhattan on 6th Street in Murray Hill, one restaurant after another in a two block space. To find the food secrets, click on http://www.purewow.com/food/best-neighborhoods-in-nyc-for-food?utm_medium=email&utm_source=ny&utm_campaign=The_Best_Neighborhoods_for_Every_Type_of_Food_in_NYC_2016. And, New York is very pretty in May with trees and flowers in many neighborhoods. Enjoy.

Until next time...
You can read more of John's Blog at the Utica OD website

President"s Corner
Jerry Grega

Connected Things 2016: IoT interoperability key to success

by Sharon Shea IoT Agenda

The Internet of Things is miles away from delivering the goods. This theme echoed across presentations at MIT Enterprise Forum of Cambridge's Connected Things 2016 last week, an event that drew nearly 500 registrants.

"We've come a long way in doing great things, but it's cluttered, confused [and] chaotic," said Tom Coyle, forum committee chair. "We need to share knowledge better, get clarity on requirements, create elegant solutions and breakthrough capabilities, enhance security, interoperability and standardization, and use skillful marketing to combat clutter and confusion." "IoT is a fad, unless it can begin to earn businesses money," said Linda Bernardi, former chief innovation officer of cloud and IoT at IBM. "However, IoT requires huge amounts of integration. It's not enough having components of technology; these things all have to work together. The reason IoT has been so difficult and taken so long is because it requires integration [and] adaptation." Michael Chui, partner at McKinsey Global Institute, based in New York, said of the more than 200 IoT use cases his company researched, "roughly 40% on average -- in some cases, up to 60% -- of the value that can be unlocked [from IoT] requires interoperability."

There was a lot of talk about the need for IoT interoperability and integration, but will we ever get where we need to be? According to a man who was there at IoT's unofficial beginning 18 years ago, the Internet of Things will have to experience a few mistakes -- and perhaps even a few disasters -- to truly be successful.

Sanjay Sarma's take on IoT interoperability, security During a "fireside chat," Sanjay Sarma, professor of mechanical engineering and the vice president for open learning at MIT, discussed the difficulties of IoT and gave a bleak outlook of the future.

Sarma and his MIT colleagues -- including the phrase-coiner himself, Kevin Ashton -- were instrumental in clearing the IoT path with their 1998 research efforts.

"To me, the Internet of Things is a design vocabulary," Sarma said. "The problem with a new vocabulary is it takes a long time to figure out how to use it. Unlocking value from new design languages, from new capabilities is exquisitely painful. And when it happens, it's miraculous."

Sarma explained how his daughter, in saying "I'll WhatsApp you my location," embodied a language that wasn't understood 15 years ago -- one that includes technologies such as atomic clock, GPS, cellular telephony, social networking and Google Maps. Sarma reminisced when the cell phone was created. "People said, 'Why do I need a cell phone? I have a cordless phone.' We can laugh now, but the possibilities that new things enable are very difficult to dream."

The dream -- and the up-and-coming tech-savvy workers of tomorrow who understand IoT's design vocabulary -- will disrupt companies, according to Sarma.

"1998 was very different from 2016," Sarma said. "1998 was still the era of the big companies. It was OK for them to shrug off new technologies and say, 'In good time.' 2016 is a much more brutal landscape. You can be Boston Cab and you don't know Uber is just around the corner, about to wipe out your very lucrative business.
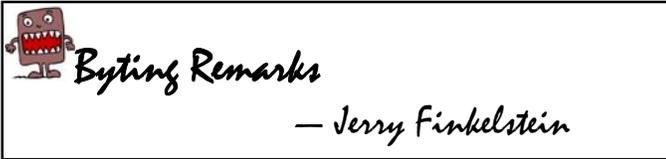
You could be Ritz Carlton; you don't know Airbnb is right around the corner ... Today, if I'm a big company, I cannot afford to ignore the crazy kid with the crazy startup company, because that's going to attack me much more rapidly because of the enabling technologies that kid has access to."

Sarma offered the example of General Motors, saying they must be nervous nowadays, especially since startup Tesla California just got 300,000 preorders for its electric car, "which is basically a battery, an iPad and two motors."

"If you're GM right now, you've got to be questioning your whole strategy," Sarma said. "You've got to think about this design language and look at the sentence you can make with the design language. And if you aren't finishing those sentences and delivering the punchlines, someone else is doing it." However, with so many companies in the mix, we seem to be entering the age of walled gardens, with every organization creating its own architecture and language for IoT.

Unfortunately, we only learn from our mistakes. It's easier to sell painkillers than vitamins. Sanjay Sarma professor of mechanical engineering at MIT

Byting Remarks
— Jerry Finkelstein

The New York Times recently reported that Intel will be firing 12,000 people in the next six months. This is in addition to some 11,000 firings announced a few months ago. We reported on this in previous articles, PCs are no longer the wave of the future. And it isn't anything in the present. PCs are not selling .Best Buy, Staples, and others, no longer feature desktops and laptops look like they're dwindling on the shelf. Tablets are taking over. Make way for the mobile devices. Computing, as we know it, is doing a disappearing act. Our Club too, our membership, is also changing. We laugh as we remember the good old days. And nowadays, remembering now, these are the new old days. No laughing matter.

We hold on to our old computers. What questions do we ask of our guest speakers? Old fart questions about our old computers. And what do we ask our speakers to talk about?
Cloud computing? No, Windows 10. Anybody thinking of getting a new mobile device, a really neat looking tablet, lightweight, less than a half inch thick, with 14 or 15 hour battery? Even the name of our Club reflects a dying breed. How many club members do we have left and how many attend our meetings? Maybe our slogan should be changed from members helping members to old farts holding up other old farts.

More changes, right here in our Club. Starting this summer, Lisa will not be working on our Newsletter. For months we've asked for volunteers to help out, no one stepped up to help. Now, she is definitely leaving the Newsletter. There will be no Newsletter if no one fills in. So, it is up to you if we continue, or not, the Newsletter. Think of it, the real possibility of no Newsletter. It's up to you. Somebody, step up.

"It'll take a long time to resolve the walled-garden situation," Sarma said, recalling how it took the cell phone industry 10 years to get devices to operate across countries. At least now, he continued, we have the cloud to help people talk across walls.

Yet, Sarma suggested walled gardens may not be a horrible thing, "at least inside the walls it's secured." But that doesn't mean the future of IoT is safe and sound.

"I think we will have a few disasters," Sarma predicted. "We will see a couple of power plants go down, we will see a chemical plant go down ... they will get hacked into. I'm terrified of this."

"Security cannot be an afterthought," Sarma said. But how can it be fixed?

"Unfortunately, we only learn from our mistakes," Sarma said. "It's easier to sell painkillers than vitamins."

explorer

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The MVPCUG was founded in 1981 by individuals interested in IBM compatible computers and consists of volunteers whose expertise range from novice to professional.

Meetings are held on the first Tuesday of the month at 6pm, usually at the New Hartford Library, 2 Library Lane, New Hartford.

Meetings are open to the public. Membership fee is $25.

OFFICERS and DIRECTORS

President
Jerry Grega ....president@mvpcug.com

Vice President
Lisa Britt.............. vicepresident@mvpcug.com
Treasurer
Bill Gorrell...853-3256
.... treasurer@mvpcug.com
Secretary
Joe Penabad ....secretary@mvpcug.com

Directors-at-Large
Don Pianka ['18] ....director1@mvpcug.com
Dee Pfohl ['16] ....director2@mvpcug.com
Rod St Clair ['17] ....director3@mvpcug.com

Our internet presence is at
ht t p : / / w w w. mv p c u g . com
Web Master
Lisa Britt......................webmaster@mvpcug.com

Newsletter Staff
Jerry Grega....................president@mvpcug.com
Jerry Finkelstein ....editor@mvpcug.com
John Hunter ....johnhunter@mvpcug.com

what's.coming		~ National Bike Month ~				May 2016
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	**3** General Meeting 6 PM	4	5	6	7
8	9	**10** Board of Directors Meeting 6:30 PM	11	12	**13** Friday the Thirteenth	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	**30** Memorial Day	31			May 1 – May Day May 4 – Bird Day May 11 – Twilight Zone Day May 26 – Sally Ride Day May 28 – International Jazz Day	