BURSTMODE™

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Burstmode™ reports take quick, imprecise, unvetted snapshots of many different subjects, for example at a trade show conference or exhibition

IoT World 2019, Santa Clara, CA

The Important

- Digital transformation continues to drive IT trends, including IoT
- The IoT ecosystem remains complex, with multiple opportunities: technology, solution, and business model
- The complexity of the IoT ecosystem has been highlighted as one of the reasons for the low rate of adoption, relative to the total opportunity
- Startup alley: process self-learning, security, process creation, toxin detection in water, data processing, autonomous restaurant delivery, traffic monitoring, occupancy sensing, SIM connectivity analytics, VR/AR data visualization, solutions integrators.
- Favorite demo: BadVR

Startup alley

Note: quick snapshots, not vetted research

BadVR: BadVR demonstrations had the cool factor, and visualization is going to provide that easier than a discussion on process reengineering, for sure/for example. Two demonstrations were on display:

augmented reality for displaying alerts on a specific oil and gas plant, and VR for easily sifting through a data stadium. Seeing people on the show floor walk through the augmented reality display of an oil and gas plant was kind of cool. Additionally, the non-transparent VR data stadium was an interesting concept to consider. Graphics is good, though not yet at the level imagined in the 1994 film "Disclosure", but when asked, BadVR rep suggested it would be in about 2 years. The barrier today is the kind of processors used in mobile VR systems which use "smart phone" grade processors. As that improves, so will the quality. For those of us that have been dreaming of VR-based management systems for a couple of decades already, IoT data visualization systems are an interesting area to watch.

Aimirim: Algorithm for self-learning processes. Ooooooh. OK, process stuff is not everyone's cup of tea, but if you have ever worked anywhere, where the processes are not well documented, then this sounds like a gift from the gods. Too good to be true? Possibly. If it is true, exciting news. On an interesting tangential side, is there a business model for companies learning their own processes and selling them to companies that may have a similar need – interesting thought.

Blastware: Afraid of cybersecurity exposures? Then don't use cybersecurity approaches to security, is what Blastware would claim. The people in the world most concerned about security use "air gapping" – physical isolation from other networks. Use them as an example says Blastware: isolate networks, secure boot followed by E2E cryptographic chain, WiFi without passwords, etc. Blastshield from Blastware, is marketed as a virtual "air gapping" solution, hardware+software.

Cedalo: Most process owners are not software developers, they are operations people, finance people, etc. So how can these people be engaged in process design? Let them use a tool they already know says Cedalo, that tool being Excel. Each "streamsheet" is a microservice that runs on a server, with "smart manufacturing" being one of the initial targets. The thought of people designing processes in Excel both intrigues us, because it is true that many people are familiar with it, but it also scares us as well. This puts a whole new twist on the term "running the company on Excel". We are curious to see how this plays out.

Husarnet: one of a number of companies focused on secure direct machine to machine communication without going through a cloud service. They have focused on ROS integration (Robot Operating System), and therefore the Robot segment. They also claim strong connections in automotive. Like a growing number of companies, they have a subscription offering.

Ketos: Are you one of the 200 million Americans, and countless others worldwide, that drink water with toxins and carcinogens in them? Ketos has a solution that detects toxins at the level of 1 part per billion, which they say meets "lab standards". Today the solution is being used by pistachio and other nut farmers.

Ursaleo: Take data from industrial buildings, process it, and then make it available by API. The solution includes 3D models in VR. Another example of the many opportunities to plug gaps in the IoT ecosystem.

Ya-Kai Express: 45 second wait time for food. Restaurant in a box. Recipes aspire to reproduce / simulate dishes from high-end restaurants. Blockchain is used for inventory control.

OmniPresence: Close proximity radar for use in, example, traffic monitoring / smart cities. Claimed local governments are often reluctant to invest the money required, so OmniPresence is seeking to stimulate the market by directly powering neighborhood groups/associations to monitor traffic in their neighborhood.

Ivani: Uses Bluetooth to detect the presence of "bags of water" (humans) for occupancy sensing in hospitality, as an example. They are about to start a proof of concept at the Marriott Sinclair (Texas). Drapes can be closed, cleaning services more efficient, lighting adjusted, etc. Occupancy sensing was a use case that came up multiple times on the show floor.

Connected Analytics: Uses publicly available Service Provider APIs to do SIM management, detect SIM connectivity errors / problems, and report on overages. They are integrated into Cisco Jasper, Netcracker, and other similar platforms.

Trust Central: Another startup focused on secure direct connection from one device to another, which they claim is a more complicated security problem than device to cloud service.

Machinechat: Data Management - Integrate into cloud services new devices, sensors, and legacy devices, including routers, gateways, and access points. "industry's smallest software footprint, downloadable in seconds and requiring no additional programming skills to use". Small footprint software, along with low-power devices, remain themes in IoT.

SpaceIQ: Integrated workspace management software company developing partnerships with hardware suppliers, to capture live occupancy data.

Continuing Themes

- Low-power
- Small stack software
- High-precision
- The value of data/information
- The value of data/information processing/data management/analytics/machine learning
- Data visualization
- Cloud managed
- Security
- Edge computing
- 5G
- Device management
- Human/machine wearables

- Robotics
- Drones
- SoC
- LTE-M, NB-IoT, Bluetooth, NFC, proprietary WiFi alternatives
- Antenna technology
- Blockchain
- Solution providers/integrators
- Healthcare
- Connected car
- Smart cities
- Emergency services
- Smart factories
- Smart building/workplace/hospitality/occupancy sensing
- Connected living
- Disrupting the Telco business model
- Recurring revenues

Ecosystem Complexity

IoT is complex in multiple dimensions: technology suppliers / solution integration, business model, and the breadth of verticals IoT covers.

Maybe you are a hardware manufacturer but have no idea how to build a cloud services-based dashboard/application – well there is partner for that. Perhaps you are a software developer but have no idea how to build hardware – well there is a partner for that. Perhaps you are an enterprise IT manager and need to demonstrate you are implementing IoT but have no idea where to start and what to do – well there is a partner for that. All these partnership opportunities to put a solution together is a good thing from one perspective, but it also creates a combinatorial dizziness for IT professionals. The degree of complexity was mentioned by multiple people as one of the reasons why IoT is not pervasive across all Enterprises. That said, IoT is happening in pockets.

For IT managers, strategists, analysts, and press, the other aspect of complexity is the number of verticals that the IoT conversation happens within. IoT is applicable to so many verticals, that the challenge becomes understanding the nuances of IoT within those verticals, knowing which lessons from which vertical is relevant to the industry and IT manager works in, and the sheer volume of potential literature / information.

That said, there are many reasons to be optimistic, whether you define IoT as a two-sided market facilitated by an iPhone application, industrial plant management, workplace management, hospitality management, or connected car. There are reasons to believe that some Enterprises, will be able to construct enough of a solution, to prove in a vision, and then build on that. Clearly, some use cases will "cross the chasm" before others, which strategic decision makers will need to keep a focus on. Consultants, professional services, integrators, and custom solution creators are all putting their names forward as a way to navigate complexity and be successful.

Conclusion

IoT is a catch-all phrase for many aspects of a connected, digital world, where information is generated / captured from all points of the known world / universe, analyzed, and mined for nuggets of gold. The IoT world is rich, complex, and full of possibilities. It is an important part of the Enterprise conversation, some verticals will move faster than others, there is opportunity, there is risk, and if you love to get your head around a large scope of issues, IoT is the place to stick your head.