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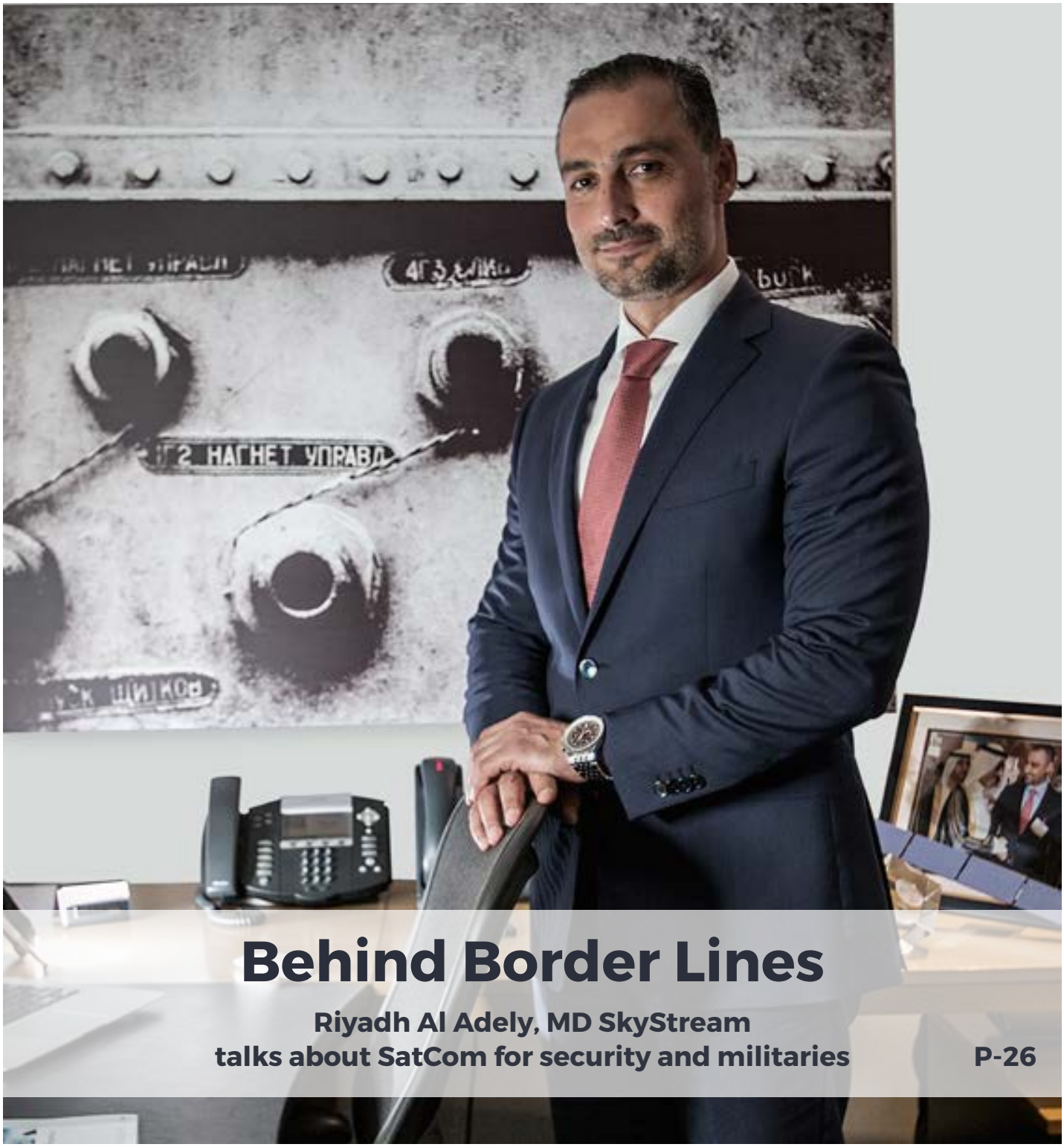

Behind Border Lines

Riyadh Al Adely, MD SkyStream talks about SatCom for security and militaries

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INTERVIEW

Communication is simply not as simple as it used to be

Toby Ruckert, CEO of Unified Inbox talks about seamless communication in a world of IoT and the challenges ahead

Interview - Gulraiz Khalid

Gulraiz Khalid: Do you believe that communication tools like WhatsApp, SMS, Facebook, BBM and many more have actually created an overload in terms of the platforms one person has to deal with in order to effectively communicate with other people?

Toby Ruckert: It is undeniably true that there is an overload in terms of platforms that a person has to interact with to communicate with others and that this will only increase multi-folds once people start communicating to 'things' more commonly.

More important, however, I believe is how did we end up here - why are there so many platforms?
Big companies start as small ideas, for instance such as Facebook is based around the relationship status of a person or Chat apps based around free short messaging. Due to the globalization and broadband penetration around the world, it didn't take much time for these ideas to become big global platforms and when they do, they often become a victim of their own success. Once a platform is big, the key stakeholders start worrying about boundaries that should be formed and the key executives follow through (not just because they are more worried about their own positions in the company). These boundaries increase administration and complexity as the rules are stipulated to protect the platform. The protection leads to multiple complexities and conflicts in approach – KPI's can conflict within teams and the objective of 'growing the platform'

and 'protecting the platform' are actually opposed to each other and this is where the real problem starts.

It is extremely difficult to grow a platform without opening it up to developers. However that means compromising on 'protecting' the platform as it is also very difficult to avoid developers extract data and build their own platform with that data. On the contrary, you can "protect" the platform but it will be very difficult to 'grow'.

The fine balance between growth and protection really does not exist. It is either 'open' or 'closed' but in most scenarios, companies try to balance it. As soon as the boundaries step in, they hamper growth and collaboration and choke the innovation potential of the platform. Simultaneously, it increases politics amidst the regulation and administration due to the 'uncertainty' of the issue.

The inability to protect means more platforms of a similar nature. The inability to completely grow without the fear of being copied or losing your core data means that one platform is not completely able to become the best and simply be the one that everyone uses for everything. Combine this with the increasing global knowledge, the number of developers around the world, and the increasing demand

for communications (eased by the availability of internet), and you have a world full of platforms for communicating. I would say marketing has a role to play in it too – you have multiple platforms which are somewhat doing the same thing but are positioned as different products for different needs and

from one brand. The choice of brand is different for each device based on the best brand for that type of device. Secondly, even if the customer buys all the devices from the same brand, the likelihood of being able to fully utilize all functionality is still conditional upon the device maker creating regular

to make IoT a success, it needs to be as simple as possible and in my opinion that is only through a unified messaging platform that is built in combination with AI (Artificial Intelligence) to make IoT understandable and easy for the user while he/she is also able to full utilize the technology.

Tech history is full of examples which over and over again prove that for a trend to rise, there has to be a second trend supporting that rise. Just think of internet penetration and ecommerce in the early 2000s and the rise of social media on the back of smartphones over the past decade. Why would it be any different for IoT and AI (or vice-versa)? AI could be that missing piece of the puzzle for IoT to truly take off.

> **“I believe it is much easier to communicate with so many platforms available, however it is very difficult to effectively communicate – and there is a fine difference between the two”**

users end up installing both the platforms.

Conclusively, I would say that yes there is an overload. What does it mean for us? I believe it means that it is much easier to communicate with so many platforms available, however it is very difficult to effectively communicate – and there is a fine difference between the two. Communication is simply not as simple as it used to be.

GK: With IoT becoming a reality, one reality will be that people will have more platforms to “talk” to. It is great to know that I may control my fridge or washing machine through my mobile, but how many apps will that mean for me? How much will this factor into the success of IoT?

TR: With the increasing number of communicating ‘things’, the number of platforms will simultaneously increase. The device makers also have a plan for this but it is currently based around buying all the devices from the same company. The device makers’ strategy is to solve the problem with one platform but that one platform only works with their own devices. If the customer chooses to buy other devices from other brands, then the customers ends up downloading their apps as well.

The solution is quite simple but has several short comings. First of all, most people do not buy everything

updates of the app, which means more work on their end, and the customer downloading updated versions all the time.

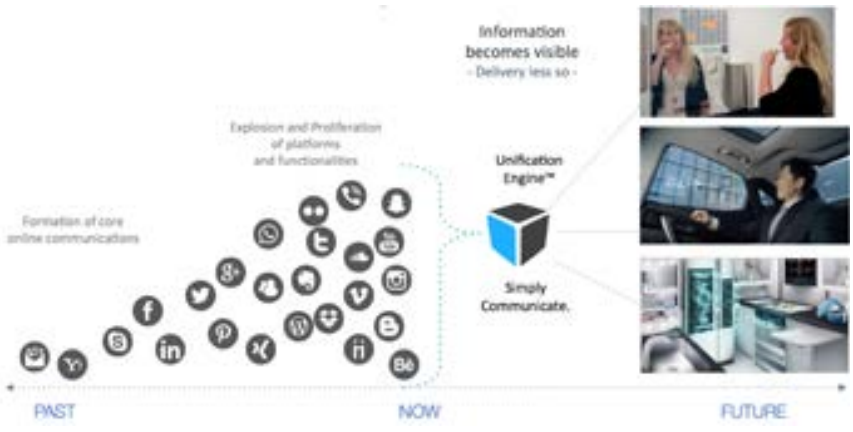
On the other hand, the idea of a single platform that could communicate with all devices on the user’s behalf, and simply tell what features work and what do not does sound much more applicable and easy for an average user at least. After all, the whole point of IoT really is (or at least ought to be) ease of life.

More than the ease of access, the number of platforms and the complexity of using IoT will actually define the success or failure of IoT – too much complication and we can see low rates of adoption, most certainly in the CIoT (Consumer IoT) space. I believe that in order

GK: If the purpose of IoT is to create more communication between things so as to create ease of life for people, I think the focus should be more on communication between things rather than things talking to people. What do you think?

TR: I think there are two sides to this – so it’s a yes and a no. Basically, we are talking about 3 different aspects here, Machine to Machine (M2M), Machine to Human (M2H) and H2M (Human to Machine), and I would like to touch on all three separately.

With respect to M2M, it is actually very hard to create a ‘unified’



standard protocol for machines to talk to each other. It is greatly dependent on the industry to collectively form a solution. For something of this sort to become a reality, there needs to be a separate common standard or a common platform that is integrate-able with different machines or the machines' OS is built such as that it can open up to this platform. This would look something like a "BlockChain" (which enables bitcoin) for payments between machines or something that can trade information/ trigger features and basically allow the machines to work with each other. This idea is quite difficult and even more so if we integrate it into a communications platform that is used for communication by users for other purposes.

> **"Unified Inbox is a one-stop shop for all the communication needs of an IoT world"**

Currently, different industries and different global alliances are driving M2M standards on their own in accordance with their preferences. In a world where there is no unified electrical plug, people drive on different parts of the road in different countries and there is no agreement on a single metrical system, it is hard to depend on an anticipation that the world might come to an agreement on standard IoT protocols for M2M. However, M2M is also still possible but I see it as a reality for some time later in the future.

On the contrary, M2H and H2M could be easy and simply involve using the existing messaging channels that people already use between each other. The only difference will be the treatment of the machines (or things) who will be treated as a contact in the smartphones address book. If there is a human on one end of the communication, things become much simpler. It becomes very easy if the machine is treated as a regular contact and the machine is 'taught' (coded) to understand the language (which is also already happening) via natural language processing (NLP) and AI in a collective cloud backend connected to a unified messaging (or "expression") platform. That way what happens in reality is that you may be speaking to a machine, but it is similar to you pressing a button on the machine. On top of that, it is very easy to code a machine that understands language and can be represented as a unit on its own – the machine can have its own number or email address and it should be coded to know how to respond to what kind of a message.

Given the current scenario, I believe it's much easier to focus on M2H and H2M which will take us way forward from the current standpoint, and eventually M2M will follow. This gradual evolution will be supported by Artificial Intelligence (AI) turning into General Intelligence. The idea should be to focus on M2H, then H2M and then M2M. The 'universal adaptor' at the centre of all this will be an Internet of Communications (IoC) enabling the exchange of messages in between machines and humans and finally between anything and everything, anybody and everybody.

GK: How will Unified Inbox and the concept of IoC integrate into networks, and how will it eventually improve lives?

TR: Unified Inbox's platform UnificationEngine is the enabler for a true of Internet of Communications platform that will create and support a sustainable, effective ecosystem of communications within a realm of IoT.

Instead of having to download an app for every device or every brand, a user will simply chat ("talk") with his things on the existing messaging apps that he has already installed, be that a social media app such as Facebook or Twitter or a chat app such as WhatsApp. What's great is that there is no need for the manufacturer to develop an app and there is no friction for the user to have to download and install it first in order to use the smart features of his new device. Simply communicate on your preferred communication platform to the device you want to speak with. This gives a distinct competitive advantage to device makers who embed UnificationEngine into their platform's IoT backend systems versus those who still force the user to download apps, learn to use them and update them regularly.

Unified Inbox is a one-stop shop for all the communication needs of an IoT world. The UnificationEngine platform is deployed white-labelled via operators or the cloud and can be directly integrated with the backend systems of the device manufacturers, so they have complete control of all data that is sent to / from the device to the user and the ability to analyze which features the users want the most.

Many device makers do not even know what the user wants sometimes and they learn over time. Over time, we have seen much more capability of communication and connecting to a network in devices and this will keep increasing. Once the machines and the users start 'talking', the device makers only need to analyze the contextual messaging and understand what functions to introduce that would improve the level of communication – and eventually we will have the full functionality as desired.

The best way to move forward is to provide people with the basic network to communicate with 'things' and simply let them seamlessly communicate with the technology in their life. The rest of us stand, watch and learn how to improve the devices and the network. We do that and we are looking at a world with the IoT we dream of today. T

ARTICLE

When social media meets IoT

Ken Herron

"CIoT (Consumer Internet of Things), IIoT (Industrial Internet of Things), GIoT (Government Internet of Things)? If we have all of the technologies, what is really keeping IoT from taking off, right now, globally?"

I was asked this question recently over lunch by a smart engineer friend with a love for Thai food who works in Dubai. Without thinking, I answered, "Social IoT. Developers, manufacturers, operators, and governments need to implement the 'last mile for IoT,' the social layer of the Internet of Things. That is the missing piece."

The last mile for IoT is Social IoT

So what is Social IoT? Social IoT is the ability for you to simply talk – meaning write or speak (think Natural Language Processing (NLP) and the explosion in Artificial Intelligence-(AI)-driven chat bots – to *any* of your smart, connected devices, and they back to you on *any* of the communications channels you use, without a dedicated, ecosystem-, device-, or maker-specific app **[see the sidebar on app fatigue].**

Social IoT taps the communications channels – and their respective native web and mobile apps – you already have and use on your laptop, tablet, and phone. Depending on the time, location, and need, you may email, text, post on social networks, or chat on messaging apps. And depending on which country you happen to be in, those can be completely different channels. You may use Line in Japan, but use KakaoTalk in Korea and Hike in Brazil. And sometimes, it's not by choice. The communications channel you rely on and use the most in one country (for me in Singapore, for example, it's WhatsApp), can be illegal and/or blocked when you're in another country (http://www.emirates247.com/business/technology/voip-including-skype-is-banned-in-uae-tra-2015-08-24-1.601231).

The magic of Social IoT is that it lets you the user control all of your different connected devices – including everything in your home and office from appliances to trash cans to locks. With a text, a tweet, or a WhatsApp, Social IoT gives you this control regardless of the technology's ecosystem (iOS vs. Android), manufacturer (Huawei vs. Samsung), or brand.

Pick up your mobile. Go to your Contacts. What do you see? You see people. Social IoT allows you to now add your smart home, your connected car, and (sooner than you think) your smart city as contacts on your phone. With Social IoT, you can have a normal conversation with all of your different devices.

Because of the tech media's recent focus on smart home technologies, there are some people who think IoT is just CIoT, but it has equally strong (i.e., compelling ROI) use cases for IIoT and GIoT.

Why does CIoT want Social IoT?

Smart homes. Connected cars. Wearables. These are all great examples of CIoT. Nothing against your bedroom, bathroom, or living room, but picture your kitchen. How many appliances do you have? A refrigerator; a conventional, convection, infrared, and/or microwave oven; a dishwasher; a coffee maker (or two…); an electric kettle; a mixer; a toaster; a food processor; a blender; and that's not even including your smoke detector. What if you could talk to them? What if you could tell your refrigerator what groceries you wanted? What if your refrigerator could also tell you how much milk, eggs, and ice cream you have left, or even auto-order them from your favorite stores (taking advantage of the best weekly price offers and specials) for pick-up or delivery? WhatsApping your oven to pre-heat itself when you give in to that craving for your favorite frozen pizza at the supermarket, so it's ready to go by the time you get home? That is the magic of Social IoT.

What do Orlando, Singapore, and Dubai have in common? They can all be hot. Very hot. I have friends who can now start their cars, and more importantly, their cars' air conditioners with an app. With Social IoT, there is no need to download another app. With Social IoT, I can show off to my friends by tweeting my car to turn on the AC. That is the power of Social IoT.

CIoT also plays well with children, seniors, and animals. Your pre-schooler runs out of the schoolyard during recess? The teacher is instantly notified via text message. Your elderly mom has a fall. Her friends and

App Fatigue

How many different apps do you have on your mobile? 10? 20? More? According to eMarketer (http://www.emarketer.com/Article/App-Marketers-Focus-on-Engagement-Retention/1013111) the average person now has between 40-70 apps on their phone. And Statista estimates (http://www.statista.com/statistics/471264/iot-number-of-connected-devices-worldwide/) we will have 22.9 billion smart devices in 2016, ballooning to over 50 billion connected devices by 2020. Do you really want to have to download (and keep updated!) a dedicated app for each device, brand, or technology ecosystem you have? Two words: app fatigue.

neighbors can be instantly messaged on Facebook. Your prize puppy is being flown to you today from the breeder in Kentucky. Regular email updates on his "Fido Fitbit" show you he's enjoying the flight. Those are the capabilities of Social IoT.

Why does IIoT need Social IoT?

There are people who work seriously dangerous jobs. Take mining for example. Mining requires working around machines and equipment that can kill you. But mining is one of the leaders in embracing Industry 4.0 (http://www.mckinsey.com/business-functions/operations/our-insights/manufacturings-next-act). Imagine you're a miner. You're likely now wearing a safety vest with a flashing red light that alerts you when you're in a dangerous situation. With Social IoT, sensors in your vest can now trigger an instantly delivered message to your smartphone, your crew, and your supervisor to give you the why, the context for the flashing red light, telling you the specific danger you're in. You're approaching a machine you've not been trained for, you've entered an area where explosives are being used, or you've exceeded the number of safe working hours on your shift. Those are the accidents at work avoided by Social IoT.

Consider your average factory, filled with machines which require both supplies and maintenance. Profit maximization is achieved through downtime minimization. Social IoT enables both maintenance and supply chain management right out of a science fiction novel. Some examples? A machine can now order its own replacement parts so it never has to stop for a "refill." Based on real-time diagnostics, all types of equipment, including elevators and escalators, can submit their own support tickets on Telegram for both repairs and preventive maintenance, sending the message to the nearest or next available engineering team. That is the improved productivity generated by Social IoT.

In April 2014, the city of Flint, Michigan changed its water source from [treated] Detroit Water and Sewer Department water to the [untreated] Flint River. Officials failed to apply corrosion inhibitors to the corrosive Flint River water, which caused lead from aging pipes to leach into the community's water supply, causing extremely elevated levels of the heavy metal, causing lead contamination in 6,000-12,000 children.

Had the city of Flint simply published their water quality sensors' daily readings on Facebook and Twitter (as cities publish their air quality sensors' daily readings), city officials and residents would have been instantly alerted of the problem before it impacted a single child, or cost the US $300 billion (http://www.usatoday.com/story/news/nation-now/2016/03/05/flint-water-crisis-could-cost-us-300-billion/81359834/). Those are the children's lives and big money saved by Social IoT.

Why does GIoT require Social IoT?

From Jun, Spain (http://www.huffingtonpost.com/william-powers/jun-twitter-social-media_b_7102780.html) to Croatia's Istria (https://www.shareistria.com/about), and from refugees to recycling (https://www.linkedin.com/pulse/from-refugees-recycling-current-social-media-best-practices-herron), governments around the world are already making great use of social media, but Social IoT is also powering smart city initiatives around the world.

There isn't a country in the world that is immune from the risks of natural and manmade disasters – threats of fires, storms, floods, tsunamis, earthquakes, tornadoes, and hurricanes; virus outbreaks; and terror attacks. The SHOUT emergency broadcast system for mission-critical communications, from SAP and Unified Inbox (https://ideas.sap.com/D32172), allows city and national governments to instantly share messages out on email, SMS, social networks, messaging and chat apps, outdoor screens, websites, and even live TV news tickers. Large enterprises use SHOUT for two-way communications with employees during times of crisis like the March 2016 Belgian airport bombing. Social IoT saves people's lives.

Why my grandfather would have loved Social IoT

What did Social IoT look like 30 years ago? Visiting my grandmother always felt like attending the trials for the Olympic stair-running team. Every time I visited, much to the relief of my grandfather, it was "Kenneth, go downstairs and see if the washer is done yet." Growing up, *I* was the Social IoT between my grandmother and her washing machine, giving both (almost) real-time alerts and notifications, and taking actions based on verbal commands. I would run down two flights of stairs to see if the wheezing old washer had finished its wash cycle, breathlessly running back upstairs to accurately report back to Grandma Mimi.

Flash forward to my mother's washing machine and dryer. Looking back at her then state-of-the-art Sears "Laundry Center," it's hard not to view it today as anything but dumb and dated. It had a buzzer to communicate when the wash cycle was finished. When I say buzzer, I mean a wake-the-dead, rattle the windows BLAAAAAAAT of a buzzer that could wake a sleeping baby the next house over.

It's now 2016. We have the internet. We have wireless connectivity. We have our mobiles. We have a rapidly increasing number of smart devices. We have Social Media. And now we have Social IoT. I am not alone in expecting my next washing machine to be able to send me alerts and notification on my (ever-changing) choice of communications channels. I will happily pay a few dollars more to have my next washing machine to be able to communicate back and forth with me on WhatsApp, WeChat, SMS, or even a tweet, but that I will be able to simply communicate with all of my different appliances and devices at home, at work, in my car, and when I travel by sending them an email, text, message, or social network post. T