The future of Housewares is quickly moving toward the Smart Home. Connectivity is being incorporated into products all around the home – from light bulbs to coffee brewers, from thermostats to ovens – connected products, once only a dream, are fast becoming reality.
The Internet of Things (IoT) is a movement that is already part of our everyday lives and is growing rapidly. And, the future is exciting for the Smart Home with several trends emerging including:

- **Cooking Technology** – Products are being embedded with smart sensors that control exact time, temperatures and even the humidity needed to properly cook a meal based on precise weights of ingredients from connected scales.

- **Healthy Eating** – Smart Juicing is now available using fresh and creative ingredient combinations; Kitchen gardens allow you to grow your own vegetables in new ways; Connected apps can provide recipes based on the ingredients you already have in your home.

- **Culinary Arts Coming Home** – Advanced culinary devices and techniques are coming to the home kitchen with sous-vide and molecular gastronomy products making their debut.

- **Popularity of Pods** – Coffee pods are now a mainstay but other products are in development using pods or cartridge formats that analyze, measure and mix ingredients to create alcoholic drinks, specialty spice mixes and flavored tortillas.

- **Safety** – Smart oven and stove controls that monitor heat, temperature and smoke now have the intelligence needed to automatically shut off the gas; Cameras now give you the ability to monitor all aspects of your home; Connected garage doors can alert you when there is unusual activity and give you the ability to open or close the door no matter where you are.

- **Convenience** – Imagine being able to connect to your refrigerator camera to allow you to see inside from the grocery store or never having to place a coffee pod order because your connected appliance knows your pantry's “inventory” based on your consumption.

- **Voice Control** – Amazon Echo, Apple's Siri and Google Home are all starting to deliver on the promise that we'll be able to control our devices through sound rather than touch.

The Internet of Things is on display at the International Home + Housewares Show. The IHA Smart Home pavilion features innovative product suppliers and developers showcasing products that demonstrate fresh ideas and designs. In addition, a strong educational program further showcases trends and technologies surrounding this movement.
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I t’s hard to comprehend that the first iPhone was released in 2007, and today over 2 billion people are using them. It all happened so quickly. What most people don’t know is back in 1999, another tsunami of technology was gaining momentum. That’s the year that Kevin Ashton, a British technology pioneer, supposedly coined the phrase “Internet of Things” while working for Procter & Gamble.

As reported by Forbes in late 2015, around 87 percent of people hadn’t heard of the term: “Internet of Things.” Fast-forward 18 months to 2017 and IoT is now a commonly used term, and everyone with a home most likely has a smart object within it. And while IoT may not have been a familiar term in 2015, most of us have used the IoT much earlier than we think as the ATM was one of the first IoT objects used by the public—way back in 1974.

As IoT approaches the point of being as gigantic as the smartphone phenomena, retailers should be aware of the more commonly used IoT objects in the Smart Home, and more importantly, understand how consumers relate to them. Take note of the emerging trends in the IoT arena, consider some common misconceptions about IoT, and explore the ideas, concepts and resulting products that continue to evolve until they become a part of everyday life.

Soon consumers will want to develop a smart home to make their lives easier, not to mention cheaper. “Can my fridge tell me when my food is almost gone and put in an order to my local supermarket?” “Can my oven teach me how to make my cookies come out perfect?” “Can someone call emergency services if my mother takes a fall in her home while by herself?” The answer to these questions is yes; some are already a reality and others are in the pipeline.

With so much change afoot, and data being king, consumers also want to maintain a comfortable, safe environment for their loved ones. Questions retailers may soon hear: “How smart should my home be?” and “Am I in danger of losing my privacy?”

Enter Michael Wolf, owner of NextMarket Insights, a boutique research and strategy firm that helps companies better understand the smart home and the IoT consumer. His advice and ideas have helped retailers (and ultimately consumers) understand what IoT means in the changing face of smart homes. In his own words, “Over my career, I’ve helped do two main things: build million-dollar content/advisory services and help companies better understand and navigate consumer technology markets.”

Mike is about as passionate as a person can be when it comes to discussing the IoT. His enthusiasm is contagious, and listening to one of his talks brings clarity to the entire IoT concept.

“I’ve been following the future and the way we live with technology since the late 1990s; in particular connectivity — the way devices talk to one another and change the way we live, and in turn, how businesses are shifting their business models,” he says. “Today, the Smart Home is no longer a futurists’ idea — it is actually happening across tens of millions of households. We’ve crossed the chasm to this era – and many of us are now living in a ‘connected’ household.”

Two new trends allow consumers to manage their own smart home experiences, Mike explains. For the technologically experienced consumer, the DIY smart home is a self-installable smart home and is not connected to any home service provider. For those who aren’t sure about which smart or connected products are right for them, Amazon offers a free in-home consultation service where consumers can try smart home products and how to voice control their home with Alexa.

“Today, a lot more products that people need are easy to install, whereas before, you had to buy an entire system,” Mike explains. “There is a movement toward more focused products — products that do one thing.
really well. And Amazon came in and had a rethink about the market.”

Hence the popularity of the Amazon Echo — a connected speaker that helps you interact with your home. If you have a question about how to cook something or where to buy a product, simply ask Echo and it provides an answer.

The new technology is also helping the average consumer become an expert at tasks or activities that normally require hours and hours of training. “As technology advances, it compresses the time it takes to become an expert,” Mike says. “For example, I have a connected beer brewery in my home. Before smart technology, I shied away from brewing beer on my own as it didn’t taste good and I didn’t want to serve up bad beer. But now I can make a great brew as the products do a lot of the hard work for me.”

Mike also believes that the Smart Home will help the growing elderly population. “Smart Homes will be able to assist with extending the time that elderly people can spend in their own homes,” he says. “As safety technology develops, there are more ways to assist them. For instance, if your elderly mother living alone fell, the smart home would register that and call 911. You could be notified if she didn’t come down for breakfast.”

The Smart Home will also add convenience to our increasingly busy schedules. As Smart Home systems become more integrated one day the sensor that knows you have arrived home from work will alert the smart cooking system, which will begin cooking the meal and then let you know when dinner is ready. That’s heaven for busy executives or those with kids and babies to feed before they get to sit down.

The promise on the horizon is that the IoT can save consumers a lot of money because the products purchased today are not static. Rather, they are shells to a product inside that can change with the times and advance alongside technology.

“Smart products that you buy now can be improved,” Mike says. “Connected products can be improved without the consumer having to buy a new one. For instance, you buy a washing machine from a manufacturer and you pay a small fee. That manufacturer then becomes your service provider. It’s more than just gaining a product — you’re gaining an ongoing service.”

As the creator of the Smart Kitchen Summit, Mike is fascinated with the advancement of Smart Home kitchen spaces. From ovens that help you cook to benches that adjust to your height as you approach, and from surfaces that talk to you to cameras built into appliances, designers and manufacturers today must change the way they make things as people are changing the way that they interact with the very fabric of their homes.

“Appliances, countertops and the furniture of a home all interact,” says Mike. “It’s a bigger idea, and it’s still early days. It’s about putting all of this into the fabric of the home, to improve lives.”

Smart Home advancements also raise the question of privacy. Essentially, a home can be filled with smart products gathering data from the people living there and that data is used by companies to communicate with them, and ultimately sell them more things and services.

“We’re coming up out of this Wild West now,” Mike says assuredly. “There is a greater understanding of security, but when the first smart products were being developed, security wasn’t a top priority. Today, manufacturers and businesses should understand that it’s a privilege, not a right, to have someone’s data.”

So, is there reason to be concerned? As with any new trend or wave in technology, it’s a matter of education. Mike recommends listening to regular podcasts and visiting sites such as http://thespoon.tech (a site that his company developed) to read stories, watch videos and join a community of others who are on the learning curve as well. Another great resource for those interested in the IoT is http://iotpodcast.com.

“We’re not slowing down,” Mike says. “Things are only about to get a whole lot more interesting.”

And no doubt, smarter.
A couple of years ago, most people hadn’t heard of Internet of Things (IoT) or the smart home. Even 12 months ago if you mentioned IoT to a room filled with people, you still would have had many blank faces looking back at you. And yet IoT has been around for decades, with the ATM (Automatic Teller Machine) launched in 1974. It is one of the most common everyday objects that has network connectivity. Which is essentially what IoT is: things that can collect and transmit data.

IoT and smart home are now here to stay, so you’d better get up close and personal with them, and make them your friend. By doing so, you will simplify your business and your life.

Carley Knobloch talks about all things digital relating to lifestyle on NBC’s Today Show, and is a host for the HGTV Smart Home program. She is also a mom with two kids and is proud to own a myriad of devices. Her stance is that “technology should rise up to serve you, not burn you out.” She says that “adopting the right technology can be life-changing” and that you can “live beautifully and elegantly with technology without spending a lot of money and time.” More importantly, she believes that everyone can do it if they have the right guide or do the right research.

Carley’s first advice is to not panic.

Yes, it’s not news—technology and the rate at which it’s changing and advancing can be overwhelming. But as a retailer, you need to take one step at a time and learn as others around you navigate the new place we are all in. “Retailers should at least have a cursory understanding of what’s happening in the market, for example, which systems are popular,” Carley says. “‘Works with Nest,’ ‘Apple Home-Kit’ or ‘Amazon Alexa-compatible’ are some to look out for. And a great place to start is with your customers: look into what are they curious about. What are they asking for?”

It won’t always be so overwhelming, and education is key to keeping up with and getting ahead of the others. Carley comments that right now the market is cluttered with options, many espoused by people in companies that won’t be around in the future or won’t have competitive systems in place. “It’s tough to figure out what to invest in and what products are compatible with what systems—that’s a problem for both retailers and consumers,” she says. “That will definitely change in the coming years. As market leaders become clear, it will be easier to determine what’s a worthwhile investment for retailers and consumers.”

Carley warns retailers that they will fall behind their competitors if they don’t keep up with technology, but if you are smart enough to run your own business, then you are also smart enough to get ahead technologically.
“Consumers are having their eyes opened to the convenience and the safety features of connected appliances, so deciding that you aren’t going to keep up, or that you can’t keep up, is a futile option. I meet so many people who feel that technology is moving too quickly or is too complicated to follow. That’s a mindset that sets you up for failure. Pace yourself, stay informed on trends and popularity, and don’t feel like you have to know it all. Most importantly, stay in touch with what your customer is asking for. That’s a recipe for not falling behind and staying relevant to the people who shop from you.”

To help make technology less intimidating, Carley recommends reading blogs such as TheInspiredHome.com and her own, CarleyK.com. “Trade magazines and technology blogs online will be covering the landscape as it evolves,” she explains. “And to make it less daunting, seek out publications that cater to the less tech-savvy crowd.

They’re a good way to stay informed without making your head spin. And the new ideas out there are exciting!”

As a retailer, you should be excited as well. Yes, you can run a business without embracing technology, but it does mean that you are missing out on opportunities and you are not reaching as many people as you could. Which basically means that you are not making as much money as you could.

“To reach people where they are (on their phones, on the go), and to reach a larger nationwide or worldwide, audience, you have to keep up and help your customers make informed purchasing decisions by providing video, reviews and more. Your customer relies on you to help them,” Carley says.

Many people bemoan automation in business, saying it will result in people losing their jobs, but Carley sees it completely differently. “Having software automate things for you doesn’t necessarily reduce the personnel you need. Having things automated in my own business frees up my team to think creatively, solve problems and come up with new ideas instead of having to do the administrative work that a robot can do. Having mundane tasks taken care of means we can think bigger about the business, not to mention spend more time with our families. As technology takes over what people can do, it’s up to us (employers and employees) to adapt, grow and evolve what we do to keep relevant in the market. A challenge to be sure, but not a recipe for unemployment if you stay on your toes!”

If there is one thing that scares Carley about the Internet of Things, it’s the effect it can have on our privacy. Cyber attacks are real, and it’s easier than ever today for hackers to gain access to personal information. Data collection is also rife. “Consumers will get more savvy about it, and they’ll put companies on notice: If you aren’t transparent about what you’re doing with the data you’re collecting, and you’re not actively protecting information by investing in hacker-proof technology, they will go elsewhere,” she warns.

Carley’s main advice to retailers on the IoT learning curve is simple and could apply to any era. For example, when people were told they’d be able to get money from a hole in the wall, many were skeptical. Break it down and look at it in the way that Carley does: The IoT is an invention that can enhance and simplify life. “Don’t feel afraid, feel empowered,” she says. “Educate yourself slowly but diligently, and listen to your customers. Technology doesn’t have to be scary—you got this.”

You can check out Carley’s blog at: carleyk.com
For most of my adult life, doing things around the home meant pushing buttons and turning dials. In fact, for almost everyone who isn’t a teenager or younger, the process of cooking, making coffee or doing laundry meant using mechanical controls.

But that’s beginning to change. Touch screens have become massively popular over the past decade, and more recently, natural language interfaces like voice recognition have captured the imagination of consumers. There’s no doubt physical interfaces are beginning to give way to digital ones.

Consider Alexa. Consumers use Amazon’s new voice assistant technology to not only play music or ask about the weather but also to cook, shop and start the wash cycle on that load of laundry. And as consumers have embraced Alexa and its physical manifestation in the Echo, companies such as Whirlpool, ChefSteps and others have rushed to create Alexa skills, voice commands that work like an application for a specific device. The Alexa skill universe has doubled in size over the past six months to more than 7,000, a growth rate reminiscent of the iPhone app marketplace a decade ago.

But Alexa is only the beginning. Other companies are exploring voice, motion-sensing and bio-authentication interfaces, as well as plugging their products into smart home and Internet of Things (IoT) platforms for integrated access and control of their products.

**Trends in the Future of Interfaces**

What does the future world of interfaces look like? Below are a few trends we can expect to see in user-interface design over the next decade.

**Interfaces will become less visible over time.** While it’s safe to say user interfaces won’t completely disappear, the trajectory is toward interfaces being less intrusive and less visible. The result will be more voice and smart phone-centric interfaces for connected devices, but also more products that anticipate your needs or act through signals sent through new technology such as machine vision.

**New interfaces enable new types of capabilities and experiences.** By integrating entirely new ways to interface with technology, many existing application categories are reinvented while new ones come to life. Voice enables new ways to interact with technology, such as using voice as an authentication and command interface for IoT. Interfaces also make our surroundings more accessible; the elderly and people with disabilities are given “virtual limbs” in the form of voice assistants to better control the world around them.

Voice assistants will become more commonplace and technology will improve to incorporate multiple users.

**Source:** IHS Markit

This shift toward new interfaces has changed how product designers create products. As new interfaces such as voice and touch become more commonplace, companies find that not only can they significantly differentiate their products through the effective use of user-interface design principles, they can also create entirely new usage and business models.
experience technology. A confluence of new technologies such as big data, cloud, anticipatory computing and social media are combining with new interfaces to create entirely new interaction experiences that are continuous, contextual and anticipatory.

The Changing Experience of Human to Machine Interfaces

So what does all this mean for us, the consumer? Are we headed toward a world where everything is controlled by our voice, where buttons and dials become a thing of the past?

The good news is no. The reality is physical controls are still extremely useful and important. They’re intuitive, people understand them and they often are more reliable.

But as we embrace interfaces that are natural extensions of ourselves, whether that means using our voice, simple motions or bio-authentication as a way to interact with the world around us, what does that mean? Simple: It makes product experiences more anticipatory, contextual and continuous.

**Anticipatory.** Technology experiences are becoming more anticipatory. This means they are increasingly predicting a user’s needs and will serve them without requiring a conscious action from the user. Google Assistant is an example of a product that is developed specifically to create anticipatory experiences, but nearly all technologies will become more anticipatory in the future by better understanding the user through a number of inputs (social, sensory, etc).

**Contextual.** New interfaces can provide information about a person’s marital status using big data from social inputs, past behavior and a sensory understanding of a person’s surroundings, which creates a more
fine-tuned experience than the generalized, one-size-fits-all technology experiences of the past. One example of a contextual experience would be a Netflix-like recommendation algorithm that considers a person’s mood, their activities up to the point of the day (or what they plan on doing later), who is in the room with them and what may have happened in the world that day.

**Continuous.** Technology experiences often are isolated from one product to the other. This means as the user passes from one life zone to another (car to home to public space to work), the new experience isn’t reflective of the previous one.

But that will change. Imagine listening to the sports game on the radio and then walking into the house and the TV turns on the game at the point where you left off on the radio. In the future, technology-driven experiences will be more continuous as a result of pervasive, connected networks and cloud computing.

**Long-Term Products Will Become More Intuitive**

Today we are in an age of adjustment and learning. However, as consumers become comfortable interacting with our products through platforms such as Alexa, products powered by new interfaces will simply become more intuitive. Generational differences will continue to persist for some – for example, some elderly have difficulty grasping the concept of touch screens on smartphones or tablets – but these will dissipate as consumers begin to adjust and new interface technologies become refined and more pervasive.

Ten years from now, no one will think twice about products that not only better understand us but will do what we want without us having to lift a finger.
For over two decades, a variety of companies and industry consortia have worked to create standards and platforms to help devices and services work better together in the connected home. Many of these technologies that are now part of making the smart home work have become household names: from long-established and pervasive communication technology like Wi-Fi and Bluetooth to newer platforms from brands like Google, Apple and Amazon, the awareness around connected tech is higher than ever.

And as the smart home moves from everyday devices like lights and thermostats to rooms such as the kitchen, and includes appliances and cooking tech, more companies outside of technology are looking at the smart home’s impact on their business.

Platforms and Partnerships
For a consumer, the variety of brands and solutions to choose from can seem overwhelming and choices often come down to compelling use cases as an entrance to adoption. As an example, home security and safety has been a leader in turning consumers on to the benefits of connected tech; protecting your home and family is not a hard sell for most.

If you’ve purchased smart home products over the past decade, you likely have experienced confusion or frustration. That’s because products can often be complicated and confusing, and there’s a chance a smart home product from one manufacturer may not work with that from another.

The good news is confusion and fragmentation are problems the industry is beginning to take seriously. In a survey conducted in late 2016, research firm NextMarket Insights (http://thespoon.tech/the-smart-home-insiders-alexa-ruled-2016-ai-security-and-voice-will-define-2017) asked smart home industry insiders what was holding back the success of their industry. According to these technology, appliance and Housewares and kitchen space companies should consider how to integrate their product offerings with emerging smart home technologies.

25% of U.S. homeowners live in a smart home; in five years, that number will more than double!

Source: Statista
service provider executives, the smart home's biggest problem was the consumer’s confusion about what exactly is smart home technology (32 percent). Not too far behind was market fragmentation at 18 percent.

But here’s the thing: while the smart home is made up of a variety of platforms and technologies that often have worked together in the past, the industry is working hard to make the smart home easier and more interoperable. Companies in the housewares and kitchen space should pay attention to the platforms that are emerging as early leaders in adoption and consider how they might someday integrate, or at the very least impact, their product offerings.

Platforms
Today’s smart home landscape comprises a variety of technologies that come from recognizable brands like Amazon, Google and Apple. But there are also some hidden players and a lot of consortiums and alliances all advocating the benefits of their platforms.

Following is a cheat sheet to a few of most important technologies powering today’s smart home.

Amazon Alexa
Over the past two years, the smart home has been completely transformed by voice control – largely due to Echo, Amazon’s Bluetooth speaker with a powerful artificial intelligence (AI) engine and personal assistant Alexa built-in. Echo’s initial introduction was met with skeptical enthusiasm, and some wondered if it would be a trendy gadget whose popularity would wane. But the open API allowed developers to build useful “skills” for Echo that gives the device robust functionality. Alexa now has over 7,000 skills that enable it to assist with everyday home functions from cooking and laundry to controlling entertainment and home devices such as lights and thermostats. Recognizing the device’s power as a hub for all devices in the home, Amazon launched the Dot, a cheaper, smaller version of Echo with Alexa built-in to extend voice assistance throughout the home.

Amazon has sold over 8 million Echos – a strong number for any brand in the connected home. And while research shows 66 percent of users are still primarily using Alexa to “retrieve information,” the potential exists for Echo to be a strong entry point to smart home and connected kitchen devices.

Apple HomeKit
When Apple announced its answer to the smart home at the 2014 developer’s conference, there was broad excitement. If the company could do for the smart home what it has done for mobile phones and personal computing, the whole industry A typical family home could contain more than 500 smart devices by 2022.

Source: Gartner Research
could benefit. But when HomeKit failed to materialize into much until 2016 and certified products with the Apple MFi chip inside were slow to roll out, the excitement around HomeKit dulled.

That’s not to say that Apple is out of the game entirely – several new HomeKit-enabled products rolled out at CES 2017, and the ecosystem seems to be growing. But the company still must figure out how to make its AI voice assistant Siri more competitive and reliable than Alexa and Ok Google, and convince consumers that the HomeKit platform is worth betting on.

Google’s Strategy
Google’s path to smart home dominance is a little more storied, but the introduction of Google Home, the company’s answer to Echo, gives Google a clearer path forward in 2017. Google’s first foray into the smart home began in 2014 with its acquisition of smart thermostat startup Nest. Nest was a rising star in the connected home landscape, reaching mainstream penetration faster than most brands, but infighting between Nest founder Tony Fadell and Google led to slow product growth and ultimately Fadell leaving last year.

Google hasn’t done a great job solidifying how all of its brands might work together in the smart home, but Google Home represents a promising way forward. Backed by Google’s incredibly powerful search engine, the possibilities for Google Home as the center of the future smart home seem enormous.

Bluetooth, Thread, Wi-Fi HaLow
Google also spearheaded the effort behind Thread, a networking protocol designed to help more Internet of Things (IoT) devices talk to one another. In the smart home, radio communication is particularly important as you add more devices to the network. Bluetooth historically has been used for point-to-point communication and Wi-Fi for large data packet transfers, but neither were developed specifically for smart devices. Though Wi-Fi is critical for cloud and remote access, it requires an enormous amount of power – it’s why the Echo has to be plugged into the wall – and isn’t suitable for battery-powered devices like smart locks, sensors and thermostats.

Mesh networks, technology that allows devices to talk to one another and gets stronger as more devices are included, have become the go-to for many smart home products. Some mesh networking technologies, like zigbee and Z-Wave, have been around for well over a decade and are found in popular brands like Phillips Hue, Samsung SmartThings, ADT Pulse and AT&T’s Digital Life. Bluetooth and Wi-Fi are playing catch-up though, both introducing Bluetooth Mesh and Wi-Fi HaLow in the last few years to be a low-power, mesh network solution while still capitalizing on each of the technologies’ strengths.

The Future Is Connected
The technology landscape for the smart home remains open, and the number of companies vying for a leadership position is large. But one thing is clear: homes of the future will be filled with connected stuff – from the ovens and fridges in our kitchens to the lights and TVs in our living rooms to the cars in our garages. How non-tech companies will integrate and capitalize on this inevitability will determine who remains relevant and who might be left in the dust.
Over the past few years, appliance manufacturers have embraced the Internet of Things (IoT), making their products more connected and adding new consumer-pleasing features such as app control and notifications. However, while neat new capabilities have garnered buzz and helped raise consumer interest, these are minor compared to the resulting shifts the arrival of IoT brings to appliance business models.

That's because added intelligence, cloud services and the ability to perform field software upgrades are combining to create a massive shift in the underlying business models undergirding the home appliance and housewares market.

And frankly, it's about time. The traditional model of one-time, sell-through of products provides little insight into usage for both manufacturer and retailer and, perhaps worse, does little to cement a persistent relationship with the consumer. Further, the inability to create more sustainable revenue streams through commerce, upgrades and affiliate partnerships is extremely limited.

That is all changing, however, and small appliance makers are now exploring what it means to transition from the role of hardware manufacturer to service provider. Here are some of the biggest shifts we are witnessing in this new service model paradigm.

**Product Makers Are Now Content Companies**

Gone are the days when you can sell your kitchen appliance with a black and white, poorly designed instruction manual. Companies like ChefSteps, Anova and Whirlpool are creating compelling, content-rich app experiences that not only show the consumer how to use their products, but immerse them in rich content to answer questions, make them better cooks and build a community. Deep video libraries, interactive recipes and access to social network-powered communities give these devices new life and create stronger brand loyalty.

**Programmatic Commerce is the New Shopping List**

For years, small appliance makers have tried to tap into aftermarket purchasing through partnerships, private labeled products and co-marketing efforts. While these are all valid ways to expand business beyond one-time hardware purchases, the reality is consumers are increasingly turning towards programmatic commerce as a way to replenish their cupboards and help them get dinner on the table. Early efforts by brands like Nespresso to create auto-replenishment for their coffee makers are just the beginning, as companies begin to integrate with food delivery services such as HelloFresh and InstaCart to deliver fresh food on demand, while others are incorporating Dash Replenishment into their products to enable everything from detergent to soft drinks sent to their homes. Studies have shown brand affinity around packaged goods is extremely high, and by enabling on-demand delivery as part of the value of a connected device, manufacturers can begin to create a long-term, sustainable, revenue-sharing model based on connected commerce.

**Appliance as a Service**

Over the past decade, the subscription model has changed the way we buy everything from music to software to food. And now, the disruptive business model that's given
rise to companies such as Salesforce and Blue Apron may be coming to the world of appliances. By leveraging IoT and smart home technology, a connected-appliance-as-a-service model could soon transform the way consumers buy home appliances from primarily a transactional model to a service based one.

So how would it work? Instead of a one-time, upfront purchase of an appliance, consumers may opt to pay a modest fee every month in exchange for a fully-managed, fully-supported device. The benefits are clear on both sides of the equation. For their part, consumers get an appliance that always has the latest features and fewer service issues. Remote software upgrades, diagnostics and on-call support create a better overall experience for the consumer, ultimately creating stronger loyalty.

For manufacturers, the long-term economic value of monthly payments in perpetuity would create greater and more predictable revenue streams. The ability to remotely upgrade and service products in the field will result in increased overall consumer satisfaction. Subscriptions can also come in the form of new revenue streams such as meal kits or replenishment services with their own products or through third parties azon.

A New World
The bottom line is while IoT-powered devices enable many significant consumer-pleasing features, the bigger opportunity for appliance makers is radically transforming the way they do business. Companies hardened in their traditional way of doing business should understand that new entrants will come into the market through embracing new and innovative business models (the home security market is an example of such a disruption). Adapting to new business models that change purchase paradigms can and will lengthen the relationship with the customer, bring a greater return on investment and help avoid being disrupted.

The economic value surrounding IoT could be worth approximately 11% of the global economy by 2025.

How New Technology Will Change the Future of Cooking

By Michael Wolf

If you look at how modern tech has reshaped our lives, no room in the modern home has gone untouched. Whether it’s the arrival of connected TVs and Netflix changing the way we entertain ourselves, or connected cams and motion sensors to keep our family safe or to monitor what Fido is up to, it’s clear the connected home has arrived.

Still, if there’s one place in our lives that has largely stayed the same, it’s the kitchen. The reason is pretty simple: Cooking, at it’s core, is a very basic activity. The kitchen’s original innovation – applying heat to food to make it edible and, yes, taste better – works pretty much now as it did well over a millennium ago.

But now we are on the cusp of a new era in cooking innovation as new forms of connectivity, heating, user interfaces and artificial intelligence slowly begin to transform how we bring food to the table. Below are a few ways in which we’ll see cooking reinvented over the next decade.

Smarter

The biggest change we’ll witness is our devices will become smarter. Added connectivity and processing power will bring extra intelligence to countertop and built-in cooking devices, unlocking features like app-control and cook monitoring using advanced sensors such as in-oven cameras. This is just the beginning, as small and large appliance makers are exploring ways to connect richer data to enable enhanced understanding of food inventory, health aspects and coordinate with third-party services such as Blue Apron and UberEATS.

Your Digital Sous Chef

One of the challenges for appliance makers is to bring the level of cooking assistance to end-users that is optimized for both their skillset and their desired level of guidance. The arrival of guided cooking systems will not only provide a “GPS” for cooks who need to learn their way around the kitchen, but also act as a way for expert chefs to take their skills higher by automating routine tasks and enhancing existing cooking tools. These systems are the result of an orchestrated fusion of rich cooking media, connected devices and sensor-based real time feedback.

Bring the Heat

The last major innovation in the consumer kitchen was the microwave,
an invention with origins in defense work from the 1950s and 1960s. However, newer cooking methods using more advanced heating methods, ranging from RF technology similar to that in our mobile phones to new precision heating methods, such as those employed in the increasingly popular sous vide devices, will allow us to make better food.

While new technology can be exciting, new approaches must provide increased value in a consumer’s life while being easy-to-use.

Automation and Innovation

While we aren’t quite ready for a walking, talking robot chef in our homes, automation will have a growing impact in the kitchen over the next decade. Today we have drink makers that automate cocktail creation and multicookers that can automate many of the steps in creating tonight’s meal. We also are seeing new technology foster entirely new ways of sourcing our food, whether it is 3D food printing or new connected home growing systems.

No matter what the technology, the most important thing to remember for housewares and appliance manufacturers, retailers and tech entrepreneurs is that the consumer will decide how fast new technology makes it into their kitchen. While new technology can be exciting for those of us in the industry, the reality is new approaches must provide increased value in a consumer’s life while, at the same time, being exceedingly easy to use.

We are confident that over the next decade, both consumers and the industry will reap the benefits of efforts to reinvent the kitchen and cooking.
A Pod for Everything

By Carley Knobloch

Not so long ago, pre-measured cake mixes were a big deal. They saved homemakers precious time and effort while keeping things “homemade.” Today more than ever time is at a premium, yet we’re determined as ever to make home-cooked food and drinks we can feel good about. Enter pod technology. I know what you’re thinking—coffee and other drinks come in pods, but what else? Well, since Keurig debuted its K-Cups in the late 1990s a lot has changed, and there has been an explosion of innovations recently.

First, there are upscale coffee brewers like Nespresso, which whip up European espresso drinks via stylish capsules. Tea drinkers will love Teforia, which scans a pod of loose leaf tea, then steeps at the ideal temperature for the perfect cup. The new Bartesian machine can craft a Margarita, Cosmo or four other cocktails in seconds using pods filled with pre-blended liquid ingredients. You fill the reservoirs with alcohol, insert a pod, choose your drink strength and the machine does the rest. For a cocktail dunce like me, this could boost my mixology confidence by leaps and bounds.

Beer drinkers aren’t left out of the trend. Pico is a “personal craft brewery” whose pods are formulated to reproduce craft beers from more than 150 partner breweries. It’s far from instant—the process involves putting in a PicoPak (costing between $19 and $30 apiece), waiting two hours, then following a week-long process of cleaning and fermenting (beer takes time). But at the end of the week, you can proudly show off a keg of artisanal beer that you made at home.

Soup in a pod? Pod-based brownies? Any way you brew, cook or slice it, the future looks delicious.
Learning to Cook in the Modern Age

By Carley Knobloch

With new kitchen technologies, home cooks can be assured that their success rate in the kitchen will improve.

You might not be unboxing a robot butler this decade, but there’s a good chance you’ll be adding a robotic appliance to your kitchen. With ovens that recognize what’s inside and tell you how to cook it, slow cookers that are controlled via app and appliances that stop when your meal is “just right,” will home cooks go the way of telegraph operators? Here’s what’s cooking in the techiest kitchens of today.

My Oven, My Sous Chef
If you’ve got an overloaded cookbook shelf that you rarely touch, the idea of an appliance that walks you through meal prep might sound good. June Oven is a fast-heating countertop oven that uses a built-in camera and temperature sensors to “see” what you put in it and determines the ideal temperature, setting and cooking time. You can even stream video of your meal heating up—because why should restaurant meals hog your feed? But as for throwing out your cookbooks, not But, it will take time for the technology to fully develop for this product and others to reach their full potential.

Floating Finesse
Who needs a cook when your appliance can prep a dish to your specifications? Sous-vide cooking heats water to the ideal temperature for your preferred doneness—meat, fish, and vegetables will all work. (Sous-vide is a French technique that involves vacuum-sealing food in a plastic bag and immersing it in a pot of low-temperature water.) Some sous-vide products have associated apps that walk you through the recipes, and can even be controlled with Amazon Alexa voice command, too. Selling under $200, they are now affordably priced for passionate home cooks looking to take the mystery out of a perfectly cooked dinner. You’ll still need to season before cooking, and sear some items afterward (steak looks a bit grey when it emerges from the water bath) so it’s not quite putting chefs out of a job. But, man, it makes gourmet cooking a cinch for home chefs, and the results are delicious.

Kitchen Coach
Hello Egg wants to be the home cook’s sidekick, and it has thought of everything. Just place this small egg-shaped device on your kitchen counter, then start talking to this kitchen assistant (think Amazon Alexa with a degree from the CIA). It will help you come up with a meal plan for the week, come up with shopping lists and even order your produce for you. When it comes time to cook a meal, Hello Egg will walk you through the recipe with both voice instructions and short videos explaining techniques (in case it’s been a while since you whipped cream or zested a lemon).

With all this kitchen technology, home cooks can rest assured that their success rate in the kitchen will improve and that the future offers a lot of help with dinner.
The Living Kitchen: How Technology Will Become Part of the “Fabric” of Our Homes

By Ashley Daigneault and Michael Wolf

What do these different takes on the kitchen of the future have in common? The unifying theme that ties them together is vision of a kitchen alive with technology, where appliances, kitchen surfaces and cooking tools all work together to make life easier for the consumer.

Just how close are we to that vision? Probably not as far as you think. With advances in data, machine learning, virtual reality and artificial intelligence changing the way we shop for, store and ultimately cook and eat our food, we are witnessing a shift toward a more living kitchen.

Smart Surfaces Are Coming

One clear goal of those endeavoring to create the future of the kitchen is to make kitchen surfaces more intelligent. What were once-futuristic visions of intuitive living spaces are now appearing at trade shows and in concept demos. In 2014, Whirlpool showed off intelligent cooking surfaces similar to IKEA’s vision, and a year later a German company talked about its VUX projection interface. Other companies are working to make our surfaces adapt to the needs of a home’s inhabitants. Germany’s Tielsa has created a cabinet and kitchen counter system that dynamically adjusts their height to match the user’s.

New Interfaces Leading the Way

Amazon’s play to be the brains of our connected home starts with the AI-powered Amazon Echo. The smart Bluetooth speaker, often found sitting on a countertop, has brought voice control and AI into our homes. Ask Alexa for the news or weather and then ask her what’s for dinner based on a number of recipe skills that will help you get the meal on the table. And recipe skills are just the beginning — more and more appliance manufacturers and housewares brands are looking at the Echo as a way to add connectivity in the kitchen. GE and Whirlpool both allow Alexa to control their...
appliances. Whether it’s turning on the oven, checking the icemaker or checking to see if the laundry is done, technology is slowly creeping into our everyday tasks.

Alexa will also create a shopping list for you and allow you to order things from Amazon with your voice. And Echo isn’t the only device Amazon is putting in consumer homes to try to encourage more buying from the online retailer. The Amazon Dash division recently announced it has created over 250 brand buttons to allow for quick, one-touch ordering to be placed throughout your home.

Consumer adoption of smart home technology may have been slow over the past five years, but is accelerating with platforms like Echo and Nest bringing it to the mass market. Amazon may have been first to bring voice control to the space but Google and Apple are also looking at voice-powered AI as an entrant to being the operating system for every consumer home.

New Tools, Better Food

2016 saw the introduction of many kitchen gadgets and platforms designed to not just make cooking easier, but to make cooking better food easier. The resurgence of sous-vide, a French technique that cooks food slowly in a water bath, is being led by companies like Anova and ChefSteps with entry-level connected machines to make the technique easy. But beyond simple gadgets for single recipes, a new category of cookware is emerging that both cooks your food and automates certain processes along the way. Deemed the guided cooking category, startups like Cuciniale and Hestan Cue are making induction burners with connectivity built-in and companion apps that can automate things like temperature control to ensure a perfect meal without removing the actual joy of cooking from the process.

The Appliances of the Future

And what about the mainstays in our kitchen – ovens, stoves, refrigerators? There’s been little in the way of technological innovation in our appliances since the introduction of the microwave by Amana in 1967. But new breakthroughs in IoT and data platforms are allowing companies to rethink what appliances do to help us store and prep the food we eat. One of the major trends in the appliance space is countertop-based devices. Panasonic’s countertop

PROJECTION:
There will be 50 Billion Internet Connected Things by 2020.

Source: Cisco
The Living Kitchen continued

induction oven and the new June smart oven, along with new devices promised this year, illustrate a move to create more modular solutions with better heating technology for the kitchen.

The June oven is much more than just a countertop device; it includes cameras, sensors and machine-learning software that take the guesswork out of baking and roasting. Where the pitch for smart home tech is to make life more convenient, the value proposition for smart kitchen devices like June is their ability to help us do things better. Americans want to eat healthy and at home more often, but if cooking at home could be easier and taste better, our kitchens might start to look a little different.

If Innit has anything to do with it, the appliances of the future will be much smarter. The intelligent food platform is a big data engine that knows everything about our food and can source and identify it without user input. With partnerships with appliance giant Whirlpool and consumer magazine Good Housekeeping, Innit plans to integrate with appliances so your fridge knows what’s inside and can suggest recipes for your oven to prepare. Add in a robot butler, and you might not have to lift a finger.

Will Robots Take Over?

It’s obvious that this technical revolution in our kitchens and our homes is driven largely by Big Data. Every device is capturing huge amounts of information about us: what we eat, how we live, when we’re home and what we like to buy and consume. Many wonder what will become of all that data; it is inevitable that the connectivity in our homes will lend itself to new marketing opportunities for companies trying to sell us stuff. Privacy around how key data is going to be capitalized on is an important discussion topic.

But what about cyber intruders? Connecting all our “stuff” to the internet comes with an inherent risk of hacking, although you’re still more likely to have someone throw a brick through your window. And finally, if everything is online and our fridge, oven and shopping list are all reliant on connectivity and the cloud to function, how do power interruptions or Wi-Fi reliability interrupt our daily lives?

The U.S. government will invest $65 million in programs funding smart city technologies, aimed at easing traffic congestion and creating new mobility services.

Source: U.S. Department of Transportation

We’ve seen examples of the backlash of this during events like the Nest thermostat outage – and that’s just one device. If we’re relying on automation and machine learning to help us buy, cook and consumer our food, we need it to be reliable.

None of these concerns are enough to warrant a panic – or shying away from what will inevitably be innovations coming to our homes sooner or later. But what does the kitchen of the Home of the Future look like in 10 years?

One thing for sure: It’s likely to have some delicious food – and a few robots too.
The Future of How (and What) We Eat

By Ashley Daigneault

As connectivity transforms the way we live, work and shop, there is a heavy focus on technology’s role in our daily lives. The internet pushed us into a global economy, and the Internet of Things will connect us to our stuff and to the people who make our stuff. But what about food? We’ve explored how kitchen appliances are evolving and how grocers and retailers are shifting the way our food gets to our plates. Could the revolution change the way we eat?

VR Comes to Dinner

Picture this: You’re sitting at a dinner table, but instead of a fork and a knife in front of you, it’s a bunch of electrodes connected to your tongue and jaw. With the right amount of electrical and thermal stimulation on your taste buds and muscles, those electrodes can actually trick your brain into thinking you are tasting – and chewing – something sweet. Sounds like something from a sci-fi movie, but it’s real work being done by food scientists.

But this is all stuff in a lab – could it ever be commercialized? A group called Project Nourished (www.projectnourished.com) thinks so and has developed a type of virtual reality (VR) tourism around it. The experience involves a VR headset but also a diffuser to mimic food aromas and even a “bone conduction transducer,” which creates the sound of chewing. The future of VR eating might mean some day you could sit at a table in Cleveland and experience the sights, sounds and tastes of a restaurant in southern Italy. In addition to tourism, the diet and nutrition industry could also capitalize, developing programs where people will think they are snacking on their favorite treat – without the calories and guilt that come with it.

Looking Inside Your Food

We’ve become hyper aware of the food we eat – where it comes from, if it’s healthy, organic or non-GMO. But usually we have to rely on labels to tell us if something is good – or safe – for us to eat. Recognizing an opportunity, startups are addressing this problem with different types of scanning technology.

One of the more well-known and embattled companies in this space is SCiO, (www.consumerphysics.com) who came out several years ago with a crowdfunding campaign for its infrared spectrometer. The device was designed to read the molecular makeup – including calories and nutrients – of food. The company struggled to bring a solid product to market and faced legal challenges, and has since moved on to putting its software inside mobile phones. Others, like French kitchen device company Terraillon, are developing kitchen scales that scan food and read the nutritional info – less revolutionary, but still attempting to provide visibility into what we eat.

Perhaps the most promising in the sensor-powered food monitoring category is Silicon Valley startup Nima (https://nimasensor.com). Nima’s flagship product is a portable gluten sensor, able to detect small amounts of gluten – a largely hidden ingredient – inside of food. The science behind the product involves a chemical reaction that takes place using elements inside a disposable pod. Food placed inside the pod is then tested for antibodies and a simple happy or sad face reading is given based on the result. Nima’s advisors claim the same technology could be used to detect other allergens like peanut butter or dairy.

So, could technology make you think you’re eating chocolate when you’re actually consuming just air? Could a portable device tell you exactly what’s in the food you’re about to enjoy or even better, warn you of a potential allergic reaction?

The future of eating may include more technology than we think.
In October 2016, the technology world was jolted awake when millions of poorly secured consumer devices were compromised and subsequently used in a malicious attack on popular web services like Soundcloud and Twitter. This incident, which came to be known as the Mirai botnet attack, utilized a form of malware to take control of devices and effectively turn them into an army of zombie robots. The attack, which affected millions of connected cameras, routers and other devices, illustrated just how vulnerable our world of connected devices can be. And while the Mirai botnet didn't create massive system failures that exposed personal data or harmed lives, it became obvious that the next attack could do just that, resulting in much greater harm to consumers in the process.

In the aftermath of Mirai, executives across the appliance, home system and consumer technology industries wondered if their products could be next. While the existence of tens of millions of vulnerable devices already in our homes means the answer to this question is yes, it's important for the industry to not retreat from the connected home, but instead embrace smart home strategies that employ a robust network and smart home security as a foundational technology.

The good news is industry, government and independent consortiums are stepping forward to share information and facilitate cross-industry communication about how to create an effective strategy for protecting devices and their users from malicious behavior. Organizations such as the US Department of Homeland Security and the Internet of Things Consortium have written memos to highlight best practices in creating a sustainable strategy for protection against threats.

So what strategies can housewares manufacturers follow to best protect their products, themselves and – most importantly – consumers from attack? Here are a few:

**Keep network security in mind from the very beginning of product design.** In today's world with accelerated product development windows, many companies often treat network security as an afterthought. By not putting security of products at the front of the product creation process, manufacturers ultimately make it much more difficult down the road to secure devices.
In a recent memorandum, the Department of Homeland Security also suggests the following practices be implemented at the design phase: enable security by default, use the latest operating systems with robust security features, and use hardware that has security features built in (such as HomeKit or Zigbee).

**Utilize Experts.** Security problems often impact startups who sacrifice security for faster time to market and larger companies who make conscious decisions that do not incorporate a security-first mindset. In both situations, companies are making resource allocation decisions that ignore the fact security issues can result in significant financial and brand equity damage down the road. By investing in expertise in the form of knowledgeable partners and even employees who ensure best practices are followed, companies are taking a long-term view.

**Choose Partners Carefully.** In the age of the API, integration with third-party products is becoming extremely easy. However, the old adage “you’re only as strong as the weakest link” is especially true when it comes to network security. Choose partners that have strong and verifiable security practices in place.

**Deploy Field-Upgradeable and Extensible Products.** While networked products can mean more vulnerabilities, the inclusion of remote connectivity means product manufacturers can automate field upgrades to ensure greater security to products. By automating updates, deploying patches to address vulnerabilities and having remote ability to detect issues on even end-of-life products means safer products.

**Stay Informed.** The trend of connected products is irreversible, so it’s important for companies to utilize best practices. By engaging with organizations such as the Internet of Things Consortium (http://iofthings.org) and the Center for Internet Security, (https://www.cisecurity.org) your company can stay informed about developments and trends in network and IoT security.

The bottom line is, in the post-Mirai age companies no longer have the option of making network security a second-tier priority. As you move your business toward a connect-first business model, make sure you also put security first.
Security in a Connected-Appliance World

By Carley Knobloch

My washing machine talks to my thermostat. Amazon Alexa talks to my lights and motion sensors talk to my oven. But as these conversations proliferate in my home (and in the cloud), who’s listening in? Big companies? Hackers? More and more consumers are starting to ask these tough questions, demanding that companies provide answers. Or worse—they’re put off by the whole idea and are shying away from purchasing.

Truth: If an appliance connects to the internet, it’s potentially open to hacking. That’s true of any smart device, including the one you carry around in your pocket. Another truth: A weak device could be used to access your network, which gives a hacker access to everything on the network. That means that every time you schedule your coffeemaker to brew, thieves could be picking up valuable information, from your identity to your personal habits. And while your computer is loaded with tech to help protect it against attacks, your appliances may not be.

There’s no need to shy away from these smart devices—you just need to get a little smarter yourself. There are things you can do to stay safer in a connected home. First, create tougher passwords for all your devices—starting with your wireless router, the keys to your cloud castle. If you can remember your password easily, it’s probably not strong enough. Programs like 1Password or Lastpass can generate powerful passwords and safeguard them, like a digital vault.

80 million smart home devices shipped worldwide in 2016.

Source: IHS Markit
Second, purchase devices from reputable companies with robust development teams that are constantly updating the firmware and software. Many people think of updates as a nuisance, but updates keep your devices safe from bugs and security breaches. I recently spoke to a wireless router company that bragged they made 29 updates to their software last year—that's the kind of company you want safeguarding your home.

Finally, if you have “listening” devices like Echo, look for the Mute button, which will stop it from eavesdropping 24/7—chances are you don’t need those devices listening all the time so keep them deaf to your activities until you’re ready to chat.

With these practices, you can rest knowing that your home full of connected appliances just got a little smarter (and safer).
Reinventing Retail in the Era of Connected Devices

By Michael Wolf

W
when it comes to selling connected devices, retailers have a tough job. Smart products are often complex, can require more up-front education and suffer from higher return rates than their more traditional brethren.

As a result, efforts by some retailers to expand into the consumer Internet of Things (IoT) and smart home ended in disappointment. Office retailer Staples, who struggled to sell its first generation of connected products, eventually abandoned the effort altogether. Other major retailers like Lowe's, Sears and Best Buy have had trouble finding traction for smart home products.

And while retailers and their partners still have a long way to go to adjust to the IoT era, the industry has made real strides. Smart home product makers are starting to create more user-friendly products that better convey how they meet consumer needs, while retailers are finding new ways to sell consumer IoT products, which is translating into better results at the cash register.

Below are some lessons from companies readjusting their approach to retail in the Internet of Things era:

Tell a Story
One of the most important things for a retailer to do in selling connected products is to tell a story about how that product can make a consumer's life better. Too often product marketing focuses the message on technology, something early adopters mainly care about. By moving beyond tech to focus on the need the product solves—whether it's becoming a better cook or monitoring a newborn—consumer-facing messaging helps consumers understand how they can use it in their lives, which helps to better target of products and lowers overall return rates.

Create an Experience
Because connected products almost always offer entirely new functionality beyond that of those products they are replacing, providing in-store opportunities for consumers to see the products in action becomes paramount. Some established retailers such as Target are creating new concept models as a way to show how products work, while others such as Pirch offer in-store formats that attempt to emulate real-life experiences in the home paired with in-store expertise, such as chefs, to demo products in action.
In-Store Analytics
One of the biggest changes to retail in coming years will be a better understanding of consumer in-store behavior. While most big retailers analyze in-store traffic patterns of consumers, things are about to get much more granular. New format retailers like b8ta are employing better analytic tools to give a retailer and its product partners a greater understanding about how consumers are reacting to their products at retail. Amazon, while primarily an online retailer, is experimenting in grocery store formats that utilize in-store sensors, artificial intelligence and location-sensing to track consumer behavior from the minute they walk into the store.

In-Home Support and Services
Some retailers like Best Buy and Lowe's have long offered after-purchase installation and support services; connected products are creating new opportunities for more consultative approaches. Online retailers like Amazon are extending their reach through in-home consultations that diagnose a consumer's biggest pain points and offer tailored smart home plans and products. Other retailers like Sears are beginning to work with connected product companies such as August, who has created a concierge service platform integrated with its smart door lock to enable access into homes for repair and maintenance service.

Bottom line, retail is in the midst of a long-term reinvention as it transitions toward a world where every device that plugs in or has a battery will be connected. As brick & mortar stores face increasing competition from online retailers, the ability to help consumers and extend the relationship beyond a one-time sale will be critical for their survival in the era of connected devices.
When it comes to home technology, much attention is paid to the features—how many gigabytes, megapixels, download speeds and the like. And hopefully, all these features add up to compelling benefits—after all, if a device isn’t saving you time, money or making life simpler in some way, then why purchase it in the first place? I’d like to offer a third factor to consider, one that’s often overlooked in the world of tech: Aesthetics. Many of these devices will be front and center on our kitchen counters or bedside tables, so they should complement or add to our home’s décor, or just simply disappear. I want to know that a company has thought about how this gadget will become part of the fabric of my life. Often, good design on the outside is a tell-tale sign of a thoughtfully considered inside… I’ve seen the two elements correlate time and time again.

By Carley Knobloch

Alchema

Introducing Alchema—the smart home cider making machine that turns fresh fruit into alcohol and creates hard cider, mead or wine in just two weeks. A connected device with a free App to control it, Alchema helps you make the perfect batch of cider in 3 easy steps: just choose a recipe on the app, add ingredients (fruit, sugar and water), add a yeast packet—and that’s it. Alchema’s app lets you choose recipes, weighs ingredients and notifies you when your cider is ready. With Alchema, creating hard cider from home is as easy as making a pot of coffee.

Anova Culinary LLC

The Anova Precision Oven is the next step for the Anova Kitchen. The Precision Oven is a countertop device that connects with the Precision Cooker through the same app, making it easy to complete every aspect of your meal from start to finish. Imagine cooking salmon with your Precision Cooker and roasted potatoes in your Precision Oven, then having them both delivered at the same time, perfectly done. The Precision Oven will make your Precision Cooker more valuable and will also be an extremely valuable device on its own. It will be able to steam, bake, broil, sear, convection and coordinate cooking cycles.
Behmor

Behmor’s Connected Coffee Maker

Behmor’s Connected Coffee Maker can bring out a coffee’s true flavors with brew settings not found on other coffee makers. It’s controlled via a mobile app that lets users adjust brewing temperature and pre-soak time, or select a brew profile and start brewing. The app keeps you informed of the progress of your coffee and texts you when your brew is ready. A button on the front of the brewer allows for brewing without the app based on your favorite brewing profile. Amazon Alexa and Dash integration coming in 2017.

Char-Broil LLC

Char-Broil® SmartChef® TRU-Infrared™ Gas Grill

The SmartChef® TRU-Infrared™ 3-Burner Gas Grill is a Wi-Fi connected grill that syncs to your compatible smart device to give you state of the art monitoring and control capabilities. Char-Broil’s SmartChef® Gas Grill mobile app lets you monitor and control grill settings with your smart device. Featuring the TRU-Infrared Cooking System, this grill provides even heat, prevents flare-ups and cooks up to 50% juicier food.

GeniCan

GeniCan

GeniCan, is an innovative product for the smart home. GeniCan addresses a simple, yet universal problem: forgetfulness as it relates to grocery shopping. The Wi-Fi enabled smart device attaches to most garbage cans and recycling bins to easily automate the process of creating and updating a grocery list. Through a partnership with Amazon’s Dash Replenishment Service, GeniCan can also automatically order popular items like diapers, paper towels and snacks, once they are thrown away or recycled.

Gourmia

GWTC8500 Tea Square Personal Craft Tea Maker and Coffee Brewer

This tea maker automatically brews loose-leaf tea and coffee consistently with perfect results, without constant monitoring. The corresponding mobile app allows for one-touch remote operation, selection strength of the tea and coffee you want from three different levels, and notification on completion of tea and coffee preparation. Gourmia’s tea maker is also Alexa enabled, so users can control it with their voice using Gourmia’s new skill, “Mia.” This product is a 2017 Global Innovation Awards Finalist in the Smart Home category.
Hestan Smart Cooking, Inc.

**Hestan Cue**

A connected cooking experience, Hestan Cue is a video-guided cooking system that automatically controls time and temperature every step of every recipe. Our smart cookware, induction burner and recipe app all communicate with each other using Bluetooth® technology and embedded sensors — adjusting the cooking temperature and time as you proceed through each recipe. Hestan Cue walks you through each step with video guidance. Try new dishes. Learn new skills. Elevate your cooking without fear of overcooking or underwhelming. Cue doesn’t cook for you — it helps you cook better food, more often.

25” Memento Smart Frame

The Memento Smart Frame, the most sophisticated 4K digital photo frame with Wi-Fi. Every day, this frame will connect you to your most precious memories by displaying your digital photos in Ultra High Definition. You will appreciate its design (5 color options), impressive resolution and ease of use. With your Memento Smart Frame, you can upload 3,000 pictures to its internal memory using your smartphone, tablet or computer. The Memento App (Android, iOS, OSX, Windows) allows you to create Playlists to personalize slideshows. Print-like photos using light sensing technology. Remember what is important to you! Memento Smart Frame.

Honeywell Home & Building Technologies

**Honeywell Lyric**

Honeywell Lyric introduces its home security system. Now, you’ll be more thrilled to say you’re home. Honeywell Lyric is quite aware that it’ll take more than just a smart thermostat to succeed in this business. Since its launch in 2014, Lyric Thermostat has been well received and did play a fair game against its close competitor, Nest. Despite such success in its thermostat line, Lyric decided it wanted more. It wants to bring you a home security system that listens to you.

PantryChic, a division of Nik of Time, Inc.

**The PantryChic™ Store & Dispense System™**

The PantryChic™ Store & Dispense System™ reinvents ingredient storage, recipe preparation and pantry organization. With its sleek design and “smart technology,” the system simplifies recipe preparation by automatically dispensing the perfect amount of each ingredient directly from SmartCanisters™. The system can be used by itself or with the PantryChic™ Recipe App that allows you to discover and prepare recipes from your smart device, track your pantry and order ingredients. This convenient solution will replace traditional ingredient storage canisters, measuring utensils and scales to allow bakers and foodies at every skill level to perfect recipes in less time with less mess.
Pavilion Exhibitors

**PLOTT**

**PLOTT - Cubit**
Cubit is your partner in creativity. Cubit takes the real-world and puts it into the virtual so you can design with actual dimensional context and scale. Then it helps you take your finished design back to the real world with dimensional guidance. You don't have to do any math or calculations, or stress about how to get the project done. Instead, we enable you to focus on the reason why you’re doing a project in the first place -- and that’s figuring out how you want a project to look, and making the change in real life with dimensional guidance.

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**RnD64 Inc.**

**Hello Egg by RnD64**
Cook home. Save time. Eat better. Plan your weekly meals according to your dietary preferences, organize your shopping lists and order grocery delivery. Hello Egg provides you with easy-to-follow step by step voice-navigated video recipes. Make it your home-cooking sidekick that liberates you from the throes of mundane decision-making and frees up an extra day off for you each month.

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**Shenzhen Moikit Network Technology Co., Ltd.**

**Moikit Seed**
Moikit’s philosophy behind product design is to “focus on the essence of life and bring truth and insight to the forefront.” Always with a focus on people’s daily needs in mind, Moikit has been designing products that help develop healthier lifestyle habits. The Moikit Seed, is a smart hydration bottle that helps track water intake and more. The following features highlight the product and stays true to our mission: Water Intake Reminder; Water Consumption Tracking; Battery Life Over 30 Days; Temperature Preservation; Stale Water Warning; and Premium Stainless Steel.

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**SmartyPans Inc.**

**SmartyPans**
A Bluetooth-enabled cooking pan with in-built weight and temperature sensors computes nutrition of the food as you cook. The accompanying app allows users to automatically record and share recipes in real time and also provides step-by-step cooking instruction.
Bartenders not required. Perfectly mixed cocktails are yours at the touch of a button. Somabar empowers bartenders and novices alike to create the perfect cocktail in only 5 seconds. Engineered using the Somabar Vortex Mixing technology and our AI-assisted Cocktail Matrix to enhance the precision and speed of every pour, Somabar makes each true-to-recipe cocktail to perfection. Includes seven air-tight liquor and mixer containers and an easy to use mobile app with detailed menu knowledge of over 300 different cocktail recipes.

Cook delicious meals at home, from the office or on the go with the BLACK+DECKER® WiFi-Enabled 6-Quart Slow Cooker! The slow cooker connects to your home WiFi network and is controllable from anywhere with a free downloadable app. The app allows you to program your desired timing and switch between three heat settings; also offers options to look up new recipes and share your creations on social media. The slow cooker also functions like a traditional slow cooker offline without the app. A locking lid offers portability and dishwasher safe parts make cleanup a breeze!

SproutsIO revolutionizes the concept of local produce allowing you to grow fresh fruits and vegetables indoors, year-round. It is an app-controlled smart microgarden that learns from you. A high performance, hybrid horticulture (hydroponic and aeroponic) system, SproutsIO integrates a growing device, seed refills and software services that use only 2% of the water of conventional soil-based growing and half the power of an incandescent lightbulb. You can grow flavorful fruits and vegetables according to settings you customize. Access regional, seasonal and heirloom varietals any time, any place. SproutsIO makes a deeper connection with food possible, encouraging a new, healthy lifestyle through Personal Produce™.
# Smart Home Exhibitors

## CLEAN + CONTAIN
- MAXSA Innovations ..............................................N7030
- simplehuman ......................................................N7735

## COOK + BAKEWARE
- Hestan Smart Cooking, Inc. .....................................S2910

## DISCOVER DESIGN
- Bruno SmartCan ................................................N8537
- Fireside Audiobox ..............................................N8724
- GIR: Get It Right ................................................N8323
- W&P Design ......................................................N8214

## INVENTORS CORNER
- Herb & Body LLC ................................................N7460

## SMART HOME PAVILION
- Alchema .............................................................L14000
- Anova Culinary LLC ..........................................L13152
- Behmor ..............................................................L14000
- Char-Broil LLC ................................................L14000
- GeniCan .............................................................L14000
- Gourmia .............................................................L12739
- Hestan Smart Cooking, Inc. ..................................S2910
- Honeywell Home & Building Technologies ..........L14000
- Memento Electronics Inc. ....................................L14000
- PantryChic, a division of Nik of Time, Inc. ............L14000
- PLOTT ...............................................................L14000
- RnD64 Inc. ..........................................................L14000
- Shenzhen Molkit Network Technology Co., Ltd. ....L14000
- SmartyPans Inc. ................................................L14000
- Somabar .............................................................L14000
- Spectrum Brands, Inc. ........................................L11315
- SproutsiO Inc. ....................................................L14000
- Wink .................................................................L14000

## TABLETOP, KITCHEN ESSENTIALS + ACCENTS
- Escali, LLC .........................................................S443
- Thermos LLC .....................................................S2443

## WIRED + WELL (cont.)
- Brewista Inc .....................................................L13258
- Brita Products Co. ..............................................L12347
- Cannon Safe, Inc. ..............................................L11061
- Chefman ...........................................................L11742
- COOLSSHA Co., Ltd. .........................................L13055
- Coway Co., Ltd. ................................................L12327
- Crane USA, Inc. ................................................L12020
- Daewoo Electronics America, Inc. .....................L12561
- Dualit ...............................................................L11929
- Espressione .......................................................L11929
- flatev ...............................................................L11010
- Friedrich Air Conditioning ..................................L11762
- Gingo Bioba .......................................................L11923
- Gourmia .............................................................L12739
- Green Energy Nano Technology Ltd. ..................L13357
- Guardian Technologies, LLC ..............................L11243
- Herush Electrical (HK) Ltd. ...............................L11760
- iFAVINE ............................................................L11715
- Ingenious Designs LLC .....................................L11310
- J & Z International LLC ......................................L13320
- Jarden Consumer Solutions ...............................L11302
- Jinsung Hitech Co., Ltd. ....................................L13255
- June Life Inc. .....................................................L11035
- Kalorik ...............................................................L11726
- Kuving (NUC Group) ........................................L12539
- L’Chef ...............................................................L12744
- Merkury Innovations ........................................L11157
- Mill International AS ........................................L13144
- Mitsubishi Rayon Cleansui Co., Ltd. .................L13338
- Neato Robotics ................................................L11947
- Objecto / Hatzlachh Supply Inc .........................L11138
- Perfect Company ...............................................L12023
- Phillips North America .....................................L11336
- PicoBrew ..........................................................L12156
- Redmond ..........................................................L12957
- Sansaire ............................................................L12022
- SAS Group, Inc. ................................................L11115
- Sherwood Marketing Group ...............................L11045
- Skyline International, Inc. ...............................L11541
- Sondpex Electronics .........................................L13245
- Southwire ..........................................................L11954
- Spectrum Brands, Inc. .....................................L13151
- StoreBound ........................................................L12915
- Sunny Distributor Inc. ......................................L10600
- TCL Home Appliances (North America) Co., Ltd.  L12763
- Twin-Star International, Inc. .............................L13131
- Vivitar Sakar International, Inc. .........................L12931
- Water Stream LLC .............................................L11950
- Winix America ..................................................L11128
- Zadro Products, Inc. ..........................................L11131
KEYNOTE PRESENTATION  
Room S100

How the Smart Home is Disrupting Housewares (And What To Do About It)

Sunday, 12 noon - 1 pm

The connected home is ushering unprecedented change into the housewares industry, challenging product makers, retailers and purchasers to reinvent themselves or get left behind. This panel of thought leaders will identify key trends impacting the housewares market and discuss strategies to deal with rapid change and succeed in the era of the connected home.

Moderator: Mike Wolf - creator of the Smart Kitchen Summit, host of the Smart Kitchen Show podcast and founder of NextMarket Insights, a research and advisory firm focused on the connected home.

Panelists:
Carley Knobloch: Technology and digital lifestyle expert & host for HGTV’s Smart Home
Chris Young: CEO & Co-founder of ChefSteps, the food and technology company that developed Joule Sous-vide
Nathan Smith: Founder, CTO (Chief Technology Officer) of Wink, a Smart Home technology company.

INNOVATION THEATER PRESENTATIONS  
Room E350

The Smart Kitchen Market: Recipe for Disruption
Saturday, 2:30 – 3:20 pm
Mike Wolf: Creator of the Smart Kitchen Summit and founder of NextMarket Insights, IoT research and advisory firm.

Parenting in the Connected Home of the Future
Sunday, 1:30 – 2:00 pm
Kevin Young: SVP, Product Experience, CONTINUUM

Healthy Living Begins at Home
Sunday, 2:30 – 3:20 pm
Chris Bissig: Concept and Brand Development, GE Appliances

The Good, Bad, and Ugly of Connected Things
Monday, 10:30 – 11:20 am
Carley Knobloch: Technology and digital lifestyle expert & host for HGTV’s Smart Home

Mastering Human Connection Through Connected Products
Monday, 2:30 – 3:20 pm
Dan Kraemer: Founder, Chief Design Officer, IA Collaborative