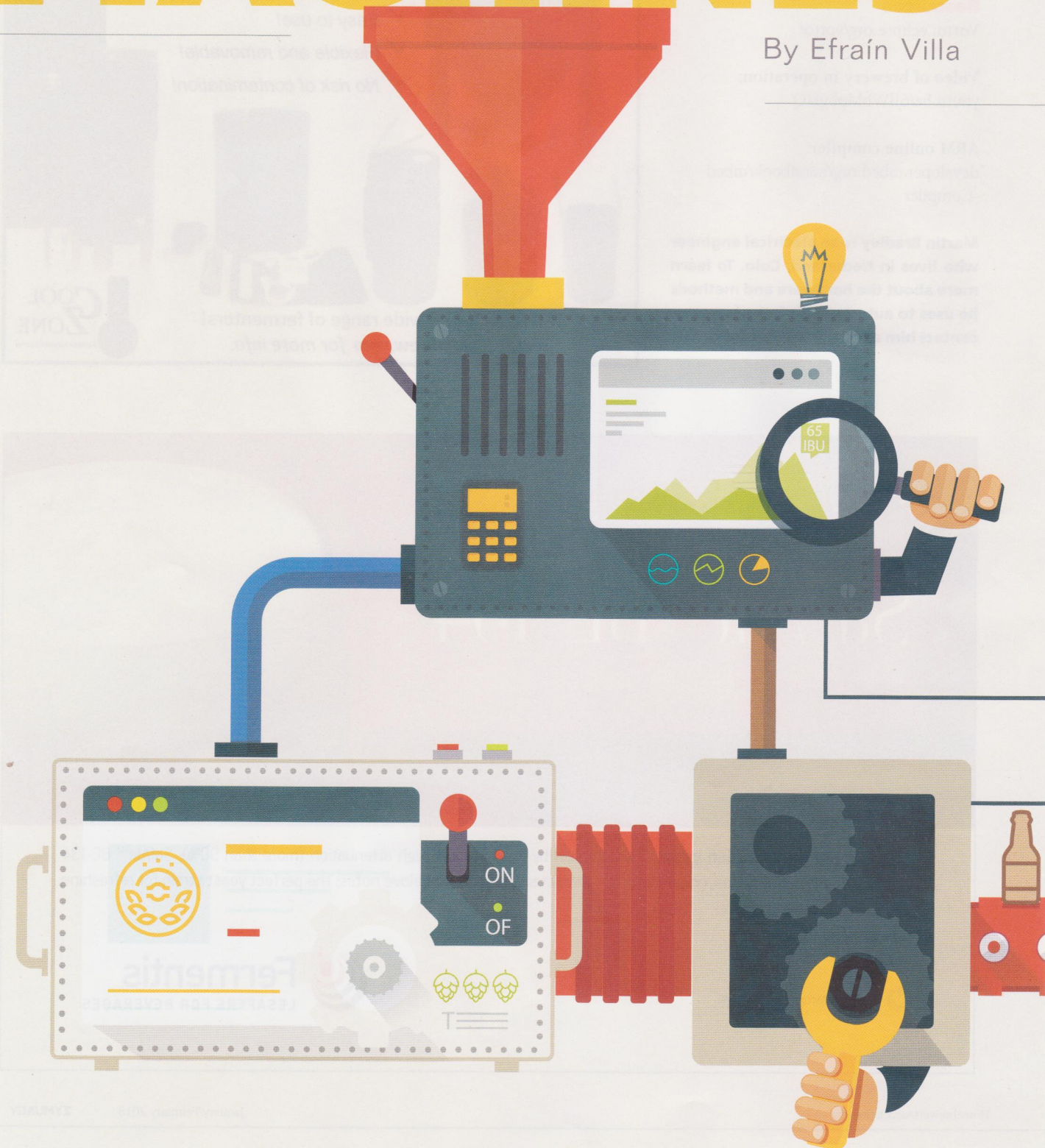


# RISE OF THE MACHINES

By Efraín Villa





**"THAT GUY AT THE BOOTH SAID YOU LITERALLY JUST HAVE TO PRESS A BUTTON AND YOU'LL HAVE FRESH BEER BY THE END OF THE WEEK," AN EXCITED WOMAN TELLS HER GROUP OF FRIENDS AS THEY MEANDER THROUGH THE CROWDED HALLS OF THE GREAT AMERICAN BEER FESTIVAL (GABF) IN DENVER, THE LARGEST TICKETED BEER FESTIVAL IN THE WORLD.**

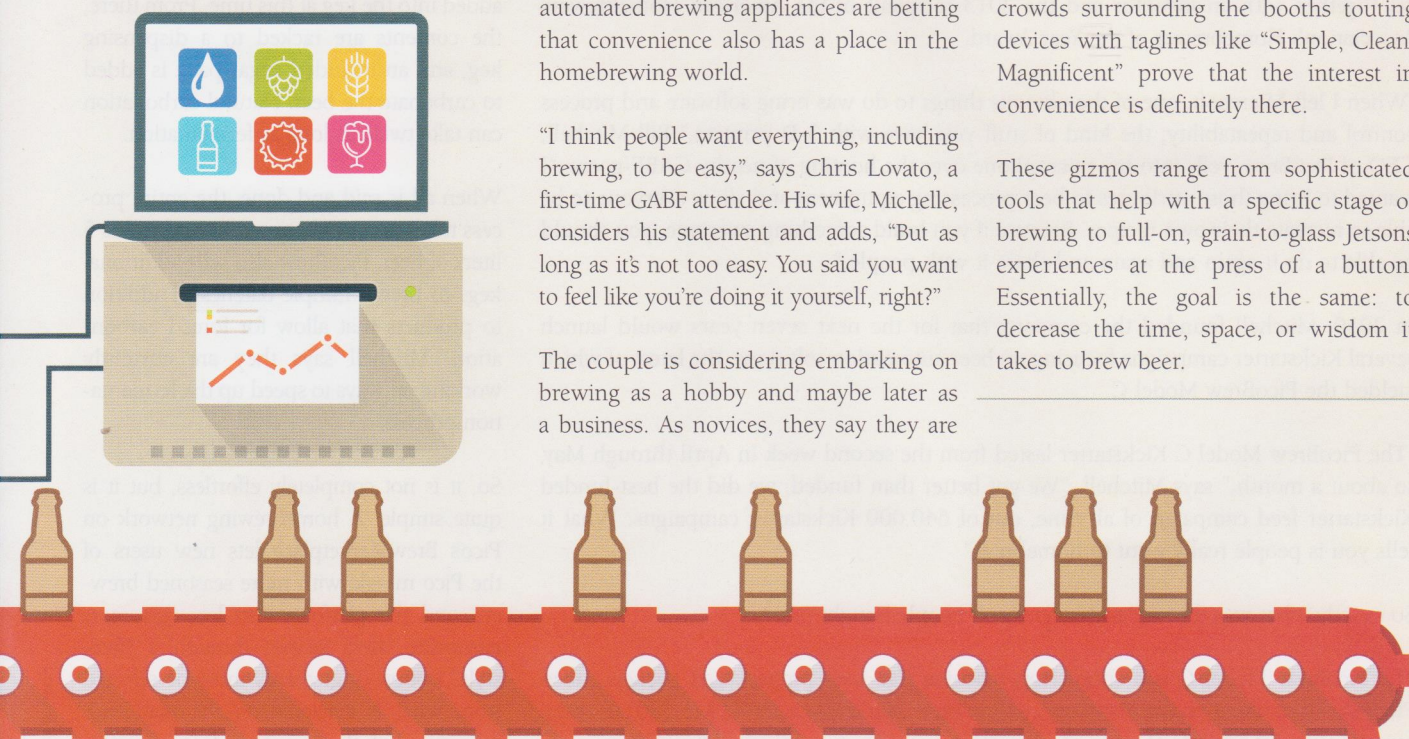
**A**mong the throngs of cheery beer guzzlers, representatives of companies developing the latest innovations in craft brewing gadgets showcase their wares to fascinated potential customers. In a crowd that prides itself in appreciating the artisanal qualities of beverages produced through blood, sweat, and tears (as well as barley, hops, yeast, and water, of course), the makers of automated brewing appliances are betting that convenience also has a place in the homebrewing world.

"I think people want everything, including brewing, to be easy," says Chris Lovato, a first-time GABF attendee. His wife, Michelle, considers his statement and adds, "But as long as it's not too easy. You said you want to feel like you're doing it yourself, right?"

The couple is considering embarking on brewing as a hobby and maybe later as a business. As novices, they say they are

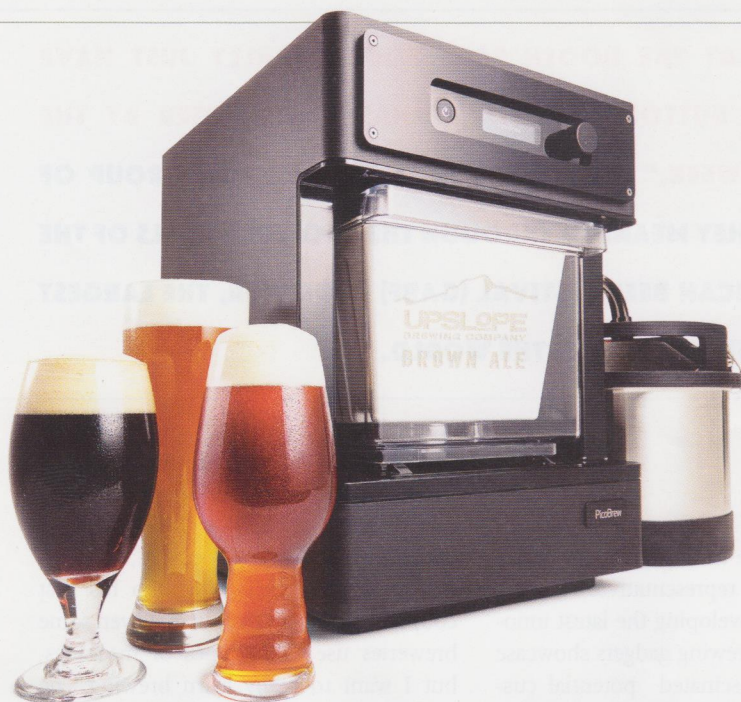
concerned about relying too much on technology. Chris has already determined that he will likely buy an "old-fashioned" brewing kit and have his cousin, an experienced brewer, help him with his first couple of batches. "I know that even some breweries use those types of machines, but I want to really learn brewing," he says. "I don't want a machine to rob me of that satisfaction." Although Chris and Michelle might not see themselves as part of the target market created by the brewing automation progression, the large crowds surrounding the booths touting devices with taglines like "Simple, Clean, Magnificent" prove that the interest in convenience is definitely there.

These gizmos range from sophisticated tools that help with a specific stage of brewing to full-on, grain-to-glass Jetsons experiences at the press of a button. Essentially, the goal is the same: to decrease the time, space, or wisdom it takes to brew beer.





## HERE IS A RUNDOWN OF FOUR OF THESE INNOVATIVE DEVICES



### PICOBREW MODEL C

APPROXIMATE COST: \$550

PicoBrew is what happens when the former vice president of Microsoft and his brother get together with an inventor and the 2013 recipient of the American Homebrewers Association's Homebrewer of the Year Award.

"When I left Microsoft, one of the obvious things to do was bring software and process control and repeatability; the kind of stuff you have with 3-D printers," Bill Mitchell, CEO of PicoBrew, yells into my microphone over the hooting of nearby GABF-goers. "I wanted to bring those attributes to beer processing equipment and allow everyone to be able to recreate their own recipes. Because if you build something awesome, you should be able to do it again and again and share it with people."

In 2010, Mitchell founded the company that for the next seven years would launch several Kickstarter campaigns focusing on beer automation solutions, the latest of which yielded the PicoBrew Model C.

"The PicoBrew Model C Kickstarter lasted from the second week in April through May, so about a month," says Mitchell. "We got better than funded; we did the best-funded Kickstarter feed campaign of all time, out of 640,000 Kickstarter campaigns. What it tells you is people really want to homebrew."

So exactly what was the vision that so many people bought into?

The PicoBrew Model C is a countertop machine that uses prepackaged packets called PicoPaks (purchased on the company's online Brew Marketplace for \$19 to \$30) to crank out almost-exact replicas of some of the world's most famous, award-winning beers.

During brewing, the machine requires little in the way of human assistance—even the water amendments are premixed. After pouring water into the receptacle and inserting

the packets of grains and hops, which the device automatically adds at the appropriate times, the PicoBrew is ready to work its magic. Users have the option to adjust the IBU and ABV values with a knob before starting the machine, but other than that, there's nothing left to do but wait approximately two to three hours.

To ferment the wort, an included yeast packet is added, which corresponds to the type of PicoPak being used. A temperature decal indicates at which temperature the keg should be kept in order to properly ferment the wort. The included keg cozy helps with temperature control, and Mitchell says backpressure in the system grants some leeway in temperature regulation. Complete fermentation takes from four days to two weeks, depending on the type of beer.

Once the amount of time on the decal has passed, the keg is put into the refrigerator to cold crash the yeast. If the recipe requires dry hopping, the packet of hops is added into the keg at this time. From there, the contents are racked to a dispensing keg, and an included sugar pack is added to carbonate the beer. Natural carbonation can take twice as long as fermentation.

When all is said and done, the entire process takes around three weeks and yields 5 liters of beer. PicoBrew also sells additional kegs to brew multiple batches in addition to products that allow for forced carbonation. Mitchell says they are currently working on ways to speed up the fermentation process.

So, it is not completely effortless, but it is quite simple. A homebrewing network on Pico's BrewMarketplace lets new users of the Pico mingle with more seasoned brewers, and the platform also lets customers customize their recipes through a "freestyle" option (ingredients must be selected from what is available on the platform). A portion of the proceeds from freestyle recipes created from scratch and sold on the BrewMarketplace compensate the beer's original creator with a residual commission.

Illustration parts © Getty





## MINIBREW

APPROXIMATE COST: \$1,200

The MiniBrew, currently in beta testing, can be preordered online before its scheduled release to the European market in the second half of 2018. Similar in scope to the PicoBrew but with a more prevalent online component, the MiniBrew also boasts a design that fully automates brewing, fermentation, and temperature control in one receptacle.

The whole process begins with an app. "In the app you discover what recipe you want to use," says Bart van de Kooij, one of the founders of MiniBrew. "Every recipe is split into three parameters: the color, the alcohol percentage, and the taste. You choose one and then you order the box with ingredients (malt, hops, and yeast) and that same app tells you what ingredients go where. Then you just hit 'play' and the machine does the rest." At launch, customization of recipes will be limited, but the MiniBrew team hopes to soon expand to a fully customizable platform.

Because the interface of the MiniBrew does not utilize premade packets, users will have to literally get their hands dirty—or at least wet—when initially mixing the malts with water prior to inserting them into the machine. From there, software in the MiniBrew utilizes cloud technology so users can monitor the brewing process of up to 5 liters of beer.

"We've put sensors into the machine," says van de Kooij. "The machine is connected via Wi-Fi, so it sends data back and forth to the cloud."

Although having a smart mini-brewery on your kitchen countertop is pretty cool,

the most important innovation of the MiniBrew is its ability to fully automate the fermentation process after brewing is complete.

"In terms of brewing machines that claim to deliver 'fully automated home breweries,' they all forget a critical step: fermenting," says Patrick Layer, Lead Acquisition & Growth Specialist at MiniBrew. "Although others also go through a fermentation process, it is manual and not fully automatic. This might work for some who have knowledge and want to play with fermentation time and carbonation levels, but with MiniBrew the whole fermentation process is covered and fully automatic due to our smart keg with temperature control. In addition, since we boil, ferment and tap from the same keg there is nearly no possibility to infect the beer."

The keg also has a CO<sub>2</sub> adapter, and the temperature settings allow users to keep the beer fresh while it is served. The downside to having the machinery fully integrated into the keg is that your MiniBrew is essentially out of commission until you are able to drink up all your beer.



THINK  
IT'S TOO  
EXPENSIVE  
SWITCH  
TO  
ALL-GRAIN?

THINK  
AGAIN!



110 volt &  
1600 watts

Double Wall  
Stainless Steel  
Construction



## THE GRAINFATHER CONNECT

APPROXIMATE COST: \$1,000

In terms of sophistication, the Grainfather Connect is probably more airplane than starship, but that could be part of its appeal to homebrewers.

“Our system is still about brewing all the grain yourself, and you’re still designing your recipe from scratch,” says Trent Slater, marketing and digital specialist at Imake, the New Zealand-based parent company of The Grainfather. “You’re still brewing craft beer the way it was supposed to be brewed. There are just a couple of paths that can save you some time. For the new guys, it can also help them before they gain competence and really go out and delve into doing their own thing.”

This is definitely not a plug-and-go model. Assembly and at least some basic know-how are required. The Grainfather Connect allows brewers to manually mash, sparge, and boil 5-gallon (20-liter) batches in a single vessel. The control unit can synchronize recipes from an app through Bluetooth in order to walk brewers through the brewing process, but its capabilities end there. The Grainfather does not ferment the resulting wort.

If you are a brewer who has, or plans to have, a series of vats, kettles, and buckets in your workspace, this product can help you decrease your brewing set-up footprint size, but it doesn’t brew the beer for you. You will, however, get the ability to say that you “crafted” your beer, and with the online community set up through The Grainfather, you will be able to say it loudly and clearly to a receptive audience.



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## BREWIE B20

APPROXIMATE COST: \$2,300

Along the same lines as The Grainfather but with many more bells and whistles, the Brewie B20 is a beautiful, stainless steel countertop device. Newcomers will find it easy to use, and experienced homebrewers will appreciate the ability to customize every aspect of the brewing process with slick online and touchscreen interfaces.

Homebrewers can use the Brewie B20 to create recipes from scratch using their own ingredients, or they can purchase a Brewie Pad, which includes malt, hops, and yeast. After mashing, sparging, and boiling up to 20 liters, the machine even cleans itself. Fermentation takes place in a separate vessel.

"There are homebrewers that don't have the knowledge to get more complicated, and so they can buy our ingredient kits and start brewing there," says Bob Culliton, general manager of Brewie's



North America operations. "After getting some experience, novices can start graduating to creating their own recipes and customizing brewing times. Because of the complete flexibility of creating your own recipes and modifying the beer brewing process, the Brewie also attracts homebrew professionals. We also think

it is applicable for nanobrew and micro-breweries for doing test batches, because it's a 5-gallon output, which can scale to larger production."

Brewie Pads start at \$29 and go up to \$190 for a four-pack.

**Efrain Villa is a photographer, actor, writer, and global wanderer whose endless quest for randomness has taken him to more than 50 countries in five continents. His writing has appeared on NPR's *Weekend Edition*, *The Good Men Project*, *TravelWorld International Magazine*, *Zymurgy*, and Spanish-language publications. When not running his consulting firm in Albuquerque, he is busy devouring exotic foods in faraway countries and avoiding adulthood while wearing the least amount of clothing possible. His travel stories dealing with the messiness, humor, and beauty of cultural collisions can be found on his website at [aimless-vagabond.com](http://aimless-vagabond.com).**

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