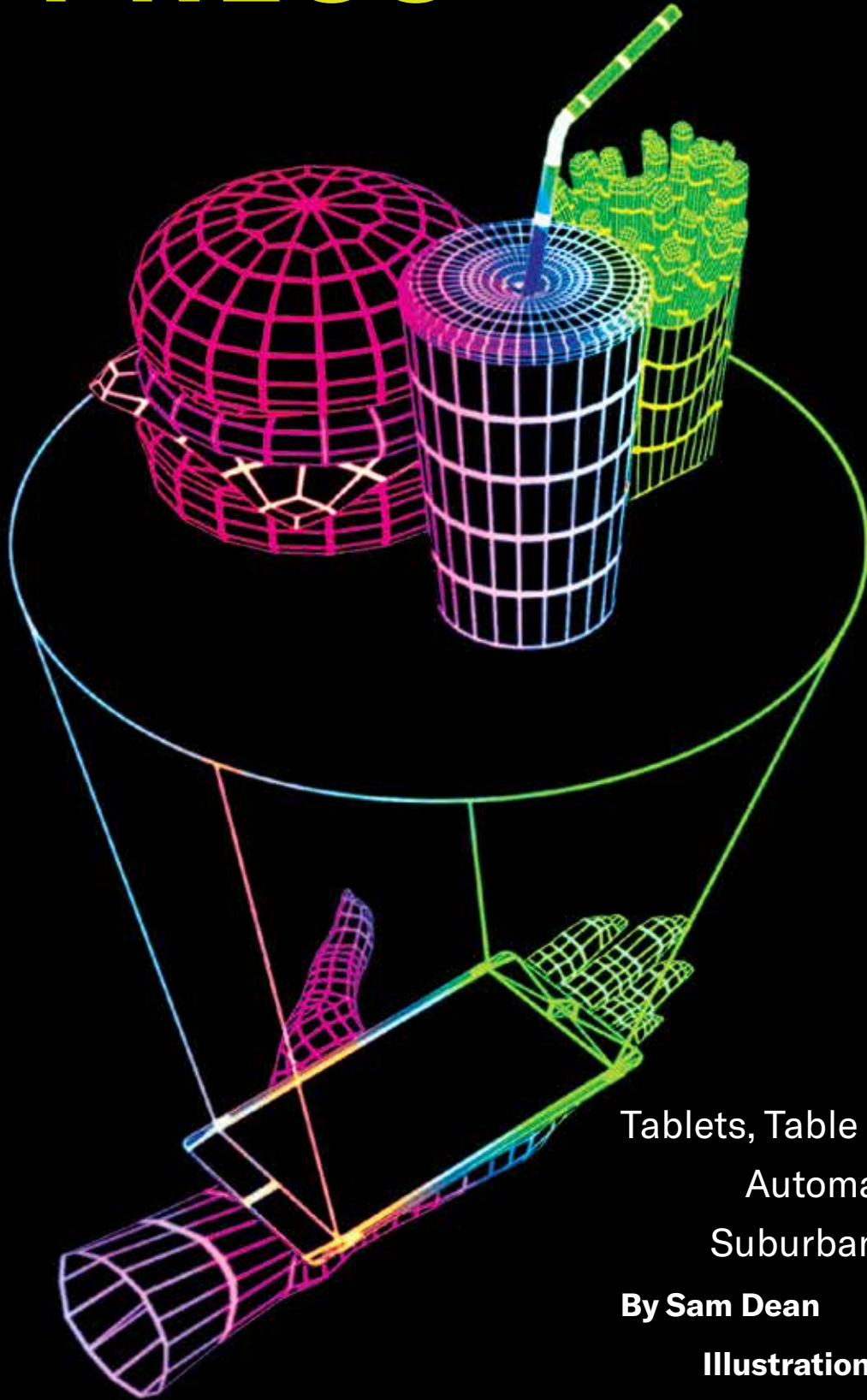# PRESS THE BUTTON

Tablets, Table Service, and the
Automated Future of Your
Suburban Date Nights

By Sam Dean

Illustrations by Erik Carter

the little tablet at the end of my table at Olive Garden glows brighter than the too-bright lights of the restaurant around it, shuffling through a slideshow of pastas and wine.

The tablet is a Ziosk, made by the Dallas company formerly known as TableTop Media. In the past five years, Ziosks and their main competitor, Presto tablets, made by a Silicon Valley company called E la Carte, have trickled onto the tables of many of America's great suburban chains. Today, you can find them in nearly five thousand restaurants across the country, in Chili's and Outbacks, in Red Robins and Applebee's.

A few swipes, a couple cautious pokes, and I've ordered a glass of pinot grigio for me, a pinot noir for my date, plus a three-app platter (mozz sticks, stuffed shrooms, fried calamari) to share.

Then Jessica, our server, stops by. She asks if she can get us started with any drinks or appetizers. There's an awkward pause, like when an acquaintance asks after a recent ex. Waving toward the tablet, I explain we've already ordered. I feel guilty that the device could steal her job, but she doesn't seem to mind.

Maybe that's because the tablet can't carry food, or handle cash, or convey to the kitchen that I might like my *linguine di mare* with sauce on the side and meatballs instead of shrimp. It definitely can't compliment my date's haircut, or make a joke about the traffic, or answer my questions about whether or not it likes working at a place with tablets on every table.

But it can take a normal order, and lets me pay with a card at the precise moment I want to leave, and then fill out a little survey about my meal. If I happen to have a kid with me, or realize with sudden revulsion that I can no longer stand to even look across the table at my companion, I could even pay an extra $1.99 for access to the tablet's library of games, and then crush some trivia while I wait for my bottomless breadsticks to be replenished.

In the fancier precincts of the food-service world, where watching a barista spend four minutes prepping a pour-over coffee is a customer's idea of a good time, robots might not seem like the future of food culture. But spend some time at the restaurants where the majority of Americans eat every day, and you'll catch a distinct whiff of automation in the air.

Andrew Puzder, former CEO of the company that owns Carl's Jr. and Hardee's (and Donald Trump's humiliatingly rejected nominee for secretary of labor), has been leading the charge, loudly trumpeting the benefits of replacing front-of-house workers with self-service kiosks at every chance, specifically in response to what he claims are the business-crippling threats of higher minimum wages and—of course— Obamacare. Machines, you see, don't need to get paid or go to the hospital. And as he told *Business Insider* last year, "they're always polite, they always upsell, they never take a vacation, they never show up late, and there's never a slip and fall, or an age-, sex-, or race-discrimination case."

Given job creators' distaste for organic employees, it's easy to see how automation might play out in Quick-Service Restaurants, or QSRs—the industry term for both fast-food operations like Hardee's and slightly more upscale "fast casual" restaurants, like Chipotle. You already have to stand in line, order your own food, and then (in most cases) pick your order up at the counter when it's ready. Pop a couple kiosks up front, maybe let people order on their phones, and bingo, you've automated away all the cashiers. This process is already under way: Panera Bread has had kiosks for years, McDonald's has started to test them out at certain stores, and Wendy's announced in February that it plans to install bots at one thousand locations by the end of 2017.

But the tabletop tablets at the Olive Gardens and Outbacks of the world seem like a stranger fit. In the industry jargon, these are "casual dining" restaurants, table-service operations that aren't quite as fancy as "fine dining" restaurants. Technically, any cheapish place with full service falls into the casual dining bucket, from greasy spoons to dim sum palaces, but the big chains make up about half of the category, and the bigger companies in the ecosystem—like Darden Restaurants, which owns Olive Garden, and DineEquity, which owns Applebee's and IHOP—are some of the biggest employers in the country. Could touch screens swipe away half of those jobs?

some observers see the tablets as little more than a negotiating tactic from bosses looking to squeeze their workforce a little further.

Saru Jayaraman, codirector of the Restaurant Opportunities Centers United, an organization fighting to improve the wages and working conditions of restaurant workers, says the tabletop tablets, for all their futuristic sheen, are nothing more than a cheap rhetorical device. "During the 'Fight for $15' in New York, Applebee's workers told us that the company was using them as a threat, saying, 'If we have to raise the minimum wage that high, we'll replace you with these tablets,'" she says. "But of course, that never happened."

More than 14 million people—

almost 10 percent of the American workforce—work in restaurants, and almost 2 million of those work for casual-dining chains. The companies that own them, like Darden, DineEquity, Brinker (Chili's), and Bloomin' (Outback), are the largest employers of tipped workers in the country. "These chains are our biggest focus," Jayaraman says "They set the standards, even for lots of independent restaurants that follow their lead."

Recently, ROC United has focused its efforts on a campaign to end the tipped minimum wage, which has been stuck at $2.13 an hour since the early '90s, and raise the general minimum wage at the same time. Jayaraman says that one of the biggest challenges in organizing restaurant workers is fighting the misinformation their employers put out. In an attempt to confuse servers into opposing a higher minimum wage, restaurant owners and managers often claim that an increase in the base wage would mean the end of tips—a flat-out lie, since states like California, Minnesota, and Washington have passed laws entitling tipped employees to the state minimum wage, and the tips keep rolling in. To Jayaraman, talk of tablets taking people's jobs is just another smoke screen from dishonest bosses. "They use scare tactics in different places," she says.

Putting our cultural preference for interacting with humans aside, it's worth asking whether the technology could even handle the job of being our server tonight.

In a well-known 2013 study at Oxford, Dr. Carl Frey and Dr. Michael Osborne tried to calculate the potential automation of various jobs in the American workforce and found that 47 percent of jobs were at a "high risk" of being swept away by technology in the coming

decades. Most of those high-risk jobs were in manufacturing, office support, and transportation (thanks to robots, better software, and self-driving cars, respectively), but a surprisingly large number were in restaurants.

The researchers ranked 702 separate occupations by their probability of being automated, on a scale from 0 ("not computerizable") to 1 ("computerizable"). Jobs that required creativity, social skills, complicated motor skills, or the ability to navigate around an "unstructured work environment" got lower scores, since computers and robots are still fairly dull and clumsy, and will be for the foreseeable future. So "chefs and head cooks" and "cooks, private household," for instance, were both ranked toward the top, far higher than "economists," "historians," and "crossing guards," thanks to the creativity and motor control necessary for high-level cooking. Restaurant managers, or "first-line supervisors of food preparation and serving workers," got ranked somewhere in the middle, less likely to be automated than "embalmers," but slightly more likely than "lifeguards, ski patrol, and other recreational protective service workers."

"Waiters and waitresses," on the

other hand, scored a precariously high .94, making their jobs safer than the apparently easy-to-automate "nuclear power reactor operators" and "umpires, referees, and other sports officials," but only by a nose.

Frey and Osborne came up with those rankings using an algorithm, taking Department of Labor job-description data and running them through a statistical model to get the final scores. They picked 70 out of the 702 jobs and asked computer scientists whether or not, in their well-informed opinions, those 70 jobs were likely to be automated. The assessments that came out of those labeling sessions were used to train the algorithm.

As expected, the expert consensus mostly matched up with the algorithm's rankings. The computer scientists thought that "Clergy" were unlikely to be replaced by PadreTrons, and the algorithm agreed. They thought that "Cashiers," on the other hand, were likely to be replaced by touch screens, and again, the algorithm agreed. But there was one notable exception: "Waiters and Waitresses." Even though the statistical model said that the job had a 94 percent chance of being automated, the human beings thought that servers could never go fully robotic.

The people behind the tabletop-tablet wave

insist that they agree with the scientists—they claim that the Ziosks and Prestos aren't meant to replace servers, nope, nuh-uh, not at all. Or, okay—

maybe a little bit, eventually. But they say the tablets are mostly there to help with the business in other ways.

"Add-on sales have grown with the help of the tablets. We have seen that it's a lot more convenient for our guests to be able to order additional appetizers," says Jessica Dinon, an Olive Garden spokesperson.

Mark Belinsky, E la Carte's COO, believes that the tablets will help servers to "be more of a guest-relations manager than a notetaker and a courier pigeon. If the guest is doing more of the actual ordering, the server can come by and say, 'Hey, how's it going? I see you ordered the new garlic fries, they're great—thanks for coming back, I remember you were here two weeks ago.' It changes the interaction pattern, the relationship."

Besides bumping check averages, the tablets can generate revenue with game fees and display ads, which the restaurants split with the tablet companies. And once the platform is in place, it becomes a powerful tool for data collection. Thanks to the surveys that pop up after meals and records of how diners use the screens, tablet-enabled restaurants are starting to get a huge amount of new data on how their customers are thinking. The tablets also encourage customers to check in with their rewards programs—which means restaurants can start crunching the numbers for an Amazon-style prediction-and-recommendation engine.

"What we talk about is how to provide a better guest experience," says John Regal, chief strategy and product officer at Ziosk. "The idea behind the company was simple: let people pay their checks when they want to—that was the number-one pain point."

And reducing the "pain" of that part of the meal, when customers are struggling to catch a server's eye and make the international sign of the scribbling fingers, benefits the business—tables turn faster, and the machines prompt customers to tip more.

T-Bird Restaurant Group, the exclusive franchisor of Outback Steakhouse in California, just rolled out Ziosks at their fifty-seven locations last winter.

"Servers obviously see something new, and the first thing they think is 'Oh great, my tips are going to be terrible, I'm being replaced by a tablet,'" says Josh Kern, T-Bird's chief marketing officer. But over the course of a six-week trial run before the full rollout, the Ziosks produced a small bump in tips—an effect that tablet-enabled restaurants say they've seen across the board, thanks to the slightly larger ticket size and the tablets' automatic suggestion of a 20 percent tip. So the servers came around.

But, Kern says, when you come right down to it, you can replace servers with tablets. Huge money-saver! "Especially with minimum wages really increasing, we're able to allow servers to cover more tables, because essentially food runners can take stuff straight out," Kern says, "then we don't have to have as many servers on staff, so to speak. It certainly helps us."

Marty Gruetzmacher, a regional manager for T-Bird in charge of the company's LA-area Outbacks, spoke about the potential impact of the Ziosk. He says it's hard to imagine total automation coming to his dining rooms, but he notes that if "a server had three tables, now they've got eight—so you had fourteen servers, now you've got eight." It's been a gradual process, but "with the natural turnover in the restaurant, 60 percent, 70 percent, we've had the benefit of not hiring for a few months."

There you have it, folks—automation in action. And according to the first academic study to observe customers using tablets, this isn't just wishful thinking born of too many Bloomin' Onions.

Alex Susskind, an associate professor at the Center for Hospitality Research at the Cornell School of Hotel Administration, worked with an in-house data scientist at E la Carte to see what kind of impact the Prestos had over the course of a busy weekend. On the customer side, he found that full tablet adopters—those who used the Prestos to both order at least one item and then pay for the meal—spent seven extra dollars and ate twenty minutes faster

than their analog peers, on average.

But more importantly, he found that servers spent 36 percent less time dealing with tables that paid on the Presto, even if they ordered in the old-fashioned way. And if customers fully adopted the tech and both paid their bill and ordered at least one dish on the tablets, waiters shaved 65 percent off their interaction time. In practical terms, they found that servers spent more than ten minutes waiting on guests who didn't touch the

tablets, and only three and a half on tables that embraced the screens.

Another Susskind study found that 70 to 80 percent of people did take to the touch screens ("I thought it was going to be lower than that, to be honest," he says), and that's likely to keep increasing as the population at large becomes more and more familiar with the technology. Even in the face of these numbers, though, he is convinced that the tablets shouldn't be used as a labor-reduction play. "Sure, you can automatically cut your staff by 30 percent if you want," Susskind says, "but it allows restaurants to reinvest that server time into other elements of the service experience, to make it better. Casual dining is having the roughest time overall in the market— if you can find ways to make guests happier, the cost will ultimately pay for itself."

Susskind is right about casual dining's rocky path. The restaurant industry story of the past ten years has been the rise of fast casual, which has exploded from essentially zero to 5.5 percent of the $800 billion American restaurant industry since the turn of the century, chewing the legs out from under the casual dining chains in the process. Last year, Ruby Tuesday closed 109 restaurants, Applebee's recently announced plans to close up to 60, and the sector overall has been in the decline for years.

But Susskind's dream of the super server? That seems a little less likely. In this context of casual dining's decline, the tablets look more like a way for the big casual dining chains

to head off fast casual at the pass. The fancier casual dining companies, like Cheesecake Factory, which brings in more than twice the revenue of the average Olive Garden at each of its locations, haven't made any moves toward adding tech to their tables. It ostensibly behooves them to keep the cachet of fine dining. At the lower end of the price spectrum, the tablets have already taken over, and it seems like only a matter of time until those "productivity gains" slash the front-of-house numbers in half.

The computer scientists that Frey and Osborne spoke with said waiting couldn't be automated, but they didn't say anything about chopping the job up and parceling it out. Think of the bare minimum that a server needs to do to keep a restaurant functioning: take orders, bring food, and collect payment. Already, the tablet has two of those three down cold.

The only roadblock standing in the way of digital servers at the great suburban chains, then, is the question of how much we, the eaters, care about having a real, live person on hand to—what, exactly? Bug about lemon wedges?

Allow me to roughly paraphrase Olive Garden's slogan: When you're there, who gives a shit?

If your factory is taken over by robots and you go get a job at Chili's to make ends meet, you've still got a job. But you might be getting paid less, or working fewer hours, or getting worse benefits, if you get any at all. As the American middle class has discovered over the past thirty years, automation doesn't necessarily mean there are fewer jobs, overall, but it often means that the remaining jobs aren't as good.

On a smaller scale, that's what's likely to play out in the restaurant industry, if server and cashier auto-

mation picks up the pace. Fast casual and fast food restaurants are already weighted toward kitchen staff, and replacing front-of-house workers with more efficient computerized systems (that also reduce the time customers spend at the table) will only increase the order volume that a given restaurant can process.

This change mirrors the larger hollowing out of middle-income jobs in America. Because unless something drastic happens, all those new back-of-house jobs are going to be worse than the waiting jobs they replace. For all the love that the food media showers on chefs, the overwhelming majority of kitchen jobs are still extremely poorly paid. A 2014 study led by researchers at Cornell looked at pay and hiring practices at restaurants across the country and found that a front-of-house worker at a moderately priced restaurant made, on average, with tips, $464 a week. Assuming a full fifty-week work year, that adds up to yearly pay of $23,200. Back-of-house workers at the same restaurants made just $360 per week—a miserable $18,000 for a year of grueling work.

That said, work is generally a bummer. And the work of a server at a chain restaurant is more of a bummer than most. Besides the low wages, most employers don't offer paid sick days, paid vacation, or any kind of health insurance to the majority of their workers. Thanks to the tip system, wage theft is rampant, as employers fail to pay minimum wage when the tips don't add up, or straight up skim the tip pool. Dining rooms and kitchens are festering slime pits of sexual harassment—two-thirds of tipped food workers are women, and even though only 7 percent of all American women work in restaurants, almost 40 percent of sexual-harassment claims submitted to the Equal Employment Opportunity Commission

come from the industry. It seems fair to say that if we could figure out a way to make sure no one ever had to be a low-wage waiter or waitress again, the world would be a slightly less miserable place.

When that day comes, restaurant workers won't be the only ones struggling to figure out what comes next. Economists like to say that technologically driven unemployment isn't really a big deal, because historically, the number of jobs has never changed much, even as the jobs themselves have been transformed. Back in the day, we all worked on farms, then we all worked in factories, and now we all have easier jobs in offices, or restaurants, or retail stores. Even if the wage growth has gotten worse over time, there's always been some kind of new job opening up as the old ones fade away.

But since 2000, that story has begun to unravel across the economy. The official unemployment rate has stayed low (outside the worst years of the recession), but that number includes only the people who are actually trying to find a job. Look a little deeper, though, and it becomes clear that more and more people have just dropped out completely, resigned to eking out a living on savings, or debt, or a potpourri of social services. By one startling estimate, the aggregate number of paid hours of work for each adult American dropped by 12 percent between 2000 and 2015—enough to shave five hours off of everyone's workweek, if we spread that decline out evenly. For the first time in centuries, it seems, the market is failing to come up with more work for us to do.

As the average hours of paid work per adult slip closer and closer toward zero, the challenge will be to make sure that those engineers and their investors (and their accommodating partners in politics) don't just let the rest of us starve, or create a nightmare world

of pointless makeup work to keep us in line. Laying the groundwork for a post-work world seems urgent once you recognize it's coming, but the issues at hand couldn't be more politicized in America today. Universal health care, untethered from a full-time job, will be necessary. A universal basic income, where everyone gets a livable chunk of cash regardless of what they do with their time, might be the next step.

Whatever the solution, it seems shortsighted to pretend that business is proceeding as usual. For all the Trumpian talk of bringing back jobs and closing our borders to trade, that ship has sailed. Even the jobs that American companies outsourced to places like China are beginning to be done by machines— Foxconn, of iPhone-assembly fame, is in the process of automating its entire production line.

Because as much as we valorize work, and even think of jobs as a proxy for our moral worth, customers' desire for cheap, easy, and convenient everything has won the day, and the customer is always right. Mark Belinsky of E la Carte points out that the average check of a Presto tablet user is 16 percent higher than those ordering face-to-face. "The reason for that is instant gratification," he says. Much in the way that anonymous online chat rooms freed people from the societal contract that kept them from sharing their most monstrous opinions, the tablets allow us to be our basest selves at the table, unafraid of reproach or judgment.

"Want another Coke? Press the button," he tells me, illustrating how easy it is to get what you want.

"Another glass of red wine? Press the button."

"Dessert? Press the button."

And, in time, we all will.