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JULY 2018

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THE POWER OF POS

How restaurants can harness the power of point-of-sale and payment hardware and software to drive business results.

BY DAVINA VAN BUREN

The State of POS

The days of limited access, on-site reports, and stationary terminals are over.

Picture the quintessential drive-in of the 1950s: It was a social spot, and a night out eating burgers and fries in the family vehicle was considered a special occasion. Back then, your friendly neighborhood server—with trusty pencil and ticket book in hand—was the point of sale (POS) system.

“POS once referred only to the site, typically a counter with a cash register, where customers handed over cash for goods and services,” says Brett R. Smith, senior director of F&B strategy and product management at **Oracle**.

“But since the old-fashioned cash register first paired up with computers in the 1970s, POS has transformed into a powerful hub for financial, sales, promotional, and operational processes.”

Technological advancement moved slower back then, and it took quite some time for changes to take hold in the market. It wasn't until the late 1980s that computerized POS systems became widely available—the disruptive technology of its era that forever changed the way restaurants operated. “With these POS systems, many tasks could be automated, resulting in much greater efficiencies,” says Alex Barrotti, CEO and founder of **TouchBistro**. “However, these systems were costly as they were based on expensive, proprietary, single-purpose hardware and usually required custom programming.”

Even when restaurateurs did invest in these costly systems, they could only do so much. POS systems were large, stationary machines without the ability to send and receive information over the Internet. “This meant operators would have to remotely access each individual store or actually be in the store in order to make changes,” says Jeremy Julian, chief operat-



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ing officer for Custom Business Solutions at **NorthStar POS**.

Whereas one-size-fits-all systems were once the norm, a wide variety of hardware and software options now allow quick-serve operators to customize solutions to meet the specific needs of their restaurants. “New offerings like software as a service (SAAS) and hardware as a service (HAAS) provide customers affordable and customizable options that can grow

with their business,” says Ivelisse Gomez, senior manager of new product development and marketing at **MMF POS**.

Modern POS systems are much more than a place to take orders and payments. Rather, quick-service operators can think of the POS as the central nervous system of the restaurant; it regulates all the other functions, from the front of the house to the back. The POS system can be used for online and mobile ordering, schedul-

Revel



ing, time clock functions, menu and media management, loyalty apps, employee training, managing deliveries and inventory, and much more. “This requires planning and a commitment to these new ways of doing business,” says Erick Kobres, chief technology officer at **Revel**. “It’s something merchants need to treat as a core part of how they do business going forward, not just as a technology bolt-on.”

No longer clunky and stationary, today’s POS systems are a definite improvement in the aesthetics department, too. They are sleek, take up minimal counter space, and can be remotely managed from anywhere in the world. Now, the point of sale is wherever the customer is, and restaurants can take payment in a variety of ways: traditional terminals; handheld ordering devices, like

iPads; self-service kiosks; and mobile applications. “Modern POS has evolved far beyond a payment and accounting system to become not only point of sale, but also point of service, driving highly individualized interactions that consistently gratify customers in the moment,” Smith says.

POS systems can also help save money, something restaurant owners are always eager to do. “The POS is the core of efficiencies within the restaurant with very heavy influence in kitchen management, food costs, and labor costs,” says Lee Crook, senior director of project management at **PAR Technology**. By analyzing past sales data, POS systems can predict how many employees are needed for a given shift, and integrating the POS with product holding units can transform how the kitchen operates. “The right POS system

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can improve efficiency, reduce food waste, and lower guest wait times by only preparing and cooking what’s needed when it’s needed,” says Aaron Miklosey, product manager at **SICOM**.

One of the most disruptive technologies in the industry is cloud-based POS systems, which enable rapid integration of critical systems in order to optimize customer experiences, while simultaneously driving higher margins. In the last decade, cloud-based POS systems have become much more affordable, allowing even small restaurants to get in on the game.

All cloud-based POS systems work from a SaaS model, which has reduced the up-front cost, making it easier for restaurant owners to make the switch to the cloud. Conversely, this model creates a new source of revenue stream for POS software providers. “Merchants are able to grow with their systems without having to do complete updates as their needs



“When these features are implemented correctly, businesses can increase their reach, revenue, and overall level of customer satisfaction.”



change,” Gomez says. “The upfront investment is considerably less than it used to be for POS software implementations, since monthly payments now cover the complete package, including servicing and repairs.”

The rise of cloud-based POS systems brings greater focus on network infrastructure for restaurants. As multifunctional as these modern systems are, ultimately they are there to make and complete sales. At the end of the day, POS systems need to process payments quickly, efficiently, and securely.

“A merchant should ask their payments provider if their network capability lives up to the ability to be cloud-based and wireless,” says Joe Pellar, senior product manager, SMB product at **Worldpay**. “Some companies are capitalizing on this new emerging field by giving processors

and POS providers in-field engineers to diagnose, setup, or fix network issues.”

As POS systems move to the cloud, business owners can use data analytics to get a deeper understanding of their customers and of a restaurant’s performance, including real-time sales, reporting metrics, inventory usage, and other critical operations metrics. “This is especially beneficial for owners of multiple locations and franchise businesses since they can see their business holistically and easily access their data from the cloud rather than having to compile data scattered across multiple locations,” says Doohoon Jeong, senior vice president of sales for **UP Solution**.

There are other notable benefits, too. Many younger employees find cloud-based systems more intuitive to operate, and they allow for all of a restaurant’s

data and insights to be accessible and manageable from one endpoint. “You can go to one URL and do everything from there,” Miklosey says. “It’s an incredibly efficient way of managing menu changes and pricing updates.”

Cloud technology also allows for real-time syncing and data storage. Making critical changes to your business, such as employee scheduling or menu additions, can be done simply by logging in to your management console. “This same architecture allows you to backup and restore information and restore it more easily, ensuring customer data is never lost,” Kobres says. Since cloud-based POS systems don’t rely on centralized databases, they also provide an added security layer. Restaurant owners can rest assured knowing that their data is securely stored and backed up in the cloud and can be restored easily if need be.

As more quick-service operators rethink business operations to achieve optimal efficiency and enhance the customer experience, the demand for wireless solutions such as tableside ordering, pay at the table, online ordering, and kiosks are on the rise. “When these features are implemented correctly, businesses can increase their reach, revenue, and overall level of customer satisfaction,” Jeong says.

Tablets have definitely taken the POS world by storm with no signs of stopping. Lightweight, versatile, millennial-friendly, and much less costly than a fixed hardware system, tablet-based POS solutions allow for either stationary or mobile models. “This offers much more flexibility to restaurant owners who may want to initially implement the POS with an iPad placed at reception or the counter and maybe another one at the wait station,” Barrotti says. “Then later, iPad Minis can be added for waiters to enter orders of guests backed up waiting in line.” As a restaurant grows, restaurateurs can easily expand a tablet-based cloud-connected POS solution without expensive and time-consuming installation fees simply by adding more tablets and downloading the POS application. This cloud-based SaaS approach can provide the additional advantage of regular updates streamed to

the POS from the cloud at no additional cost.

The mobility provided by wireless systems is proving invaluable as well. When tablets are used for line-busting in the restaurant, drive thru, or outdoor seating areas, it can transform the guest experience by reducing wait times, and drive up sales by increasing throughput to the kitchen. “Transacting customers at a single terminal with a single file line can

have grown up paying with their screen and often prefer to order in or have minimal on-site interaction. And as customers become more familiar with Berets and other self-ordering apps, look for kiosk ordering to increase in popularity. Kiosks can operate in place of—or in addition to—employees offering counter or tablet-based service. “Owners are asking for these solutions because the kiosk never calls in sick, never wants a raise ... and with the ris-

across multiple channels, such as online, offline, and mobile, through multiple platforms and functions. These exciting new channels are driven by consumer preferences and represent a new way of engaging with modern consumers. In order to meet these demands, the point of sale infrastructure must be ready to integrate with future technologies. As the point-of-sale continues to function as the core technology in quick-service restaurants, look for POS systems to integrate seamlessly with loyalty providers, caterers, and delivery and mobile ordering providers.

Customization is key moving forward in the POS industry, as technology evolves and merchants demand solutions that are specific to their businesses. “In the current decade, we’re seeing the rate of technological change accelerate even further to keep pace with today’s increasingly demanding and well-informed customers,” Smith says.

To accomplish this level of customization, Kobres says, the POS should be open application interface (API), which allows for owners to integrate third-party applications, like Como, HotSchedules, and Quickbooks.

As new concept hybrids evolve, and mobile and digital platforms expand into new ways for food to be ordered and get to consumers, flexibility through configuration and API options is critical with regard to POS design. “Every business wants to grow, and the POS system must be able to grow with the business and scale up from a few stores to a few thousand stores,” Crook says. “Scalability and enterprise management must be core to the design of the POS system.”

Looking back to its humble beginnings, it may be hard to imagine the POS system becoming more impressive than it is today. But if its evolution in the past four decades is any indication, restaurant owners have much to look forward to in the coming years, says Michael Cote, senior vice president of partners and products at **Posera**. “Today’s POS systems employ the most sophisticated technologies that integrate a multitude of solutions that manage every point of operation, and they’re getting smarter and faster every day.”



“In the current decade, we’re seeing the rate of technological change accelerate even further to keep pace with today’s increasingly demanding and well-informed customers.”

be an antiquated approach; tablets allow modern quick-service restaurants to use technology in a way that makes a direct impact on the guest experience and sales,” Miklosey says.

Also on the uptick: mobile-ordering and kiosk solutions that allow customers to self-order. Mobile ordering and payments are particularly popular among the coveted millennial market. These diners

ing cost of labor, it’s a timely conversation piece,” Barrotti says. As customers become more accustomed to using these self-serve options, quick-serve operators can save on labor by assigning fewer employees to work the counter.

Recently, POS providers have focused on becoming omni-channel commerce service providers, creating ecosystems that connect businesses and customers

POS Security: How To Safeguard Sensitive Data

As point-of-sale technology advances, so must attention to payment security.

As big data breaches become commonplace, consumers are becoming much more aware of the risks of sharing their personal data. Yet it's difficult to live in today's fast-paced, technological society without using plastic on a regular basis. The days of cash being the preferred method of payment are long gone—in fact, some businesses are eschewing cash altogether in favor of ordering and paying using technology, like loyalty apps, rewards programs, and facial recognition.

In recent years, the evolution of the independent software vendor (ISV) has proven to be one of the most significant drivers in the payments space. “Software companies have taken on payment processes, becoming independent sales organizations for processors,” says Juliet Derby, CEO at **Bematech**, adding that some large POS software providers were also acquired by payment companies. “Most of those companies’ focus has changed from thinking about the customer’s shopping experiences and services to how much revenue will they be generating within the digital payment transaction space.”

Thinking this way, Derby says, creates a customer relationship that is focused on solving short-term problems. Quick-serve operators should carefully consider the long-term relationship with their customers when it comes to security—once trust is lost, it's extremely difficult to gain back.

When it comes to processing payments securely, restaurant operators will need to consider some “big picture” questions up front. Is the information that goes in and



out of the system encrypted? Who has access to the restaurant's data? How often will passwords need to be changed? Who will have access to the payments system, and at what levels? What kind of training is provided to make sure employees treat sensitive cardholder data in the proper manner? If there is a wireless network that customers can access, it will need to be protected, too.

The first step in securing customers' data is ensuring the restaurant is PCI-compliant. PCI refers to Payment Card Industry Data Security Standard—a set of security protocols developed by major credit card companies, like Visa, MasterCard, American Express, and

“Some of the biggest threats to merchants are actually physical attacks on payment hardware.”

Discover. Its purpose is to safeguard cardholder data and ensure that merchants secure their business environment against fraud and data breaches.

“The banking industry has very high and strict standards on security, which payment processors provide to their restaurant clients,” says Alex Barrotti, CEO

and founder of **TouchBistro**. As such, restaurants should only use a fully PCI-compliant device provided by the payment processor. “When a card is swiped,” Barrotti says, “the information is exchanged directly with the payment processor, so the restaurant never has the ability to see or store any of that information.” And when it comes to swiping, more restaurants are moving to Europay, Mastercard, and Visa (EMV) technology to help combat fraud.

“Although payment software vulnerabilities are common, some of the biggest threats to merchants are actually physical attacks on payment hardware, such as fake fascias that can replicate overlays or keyboards, and skimmers, which are essentially malicious card readers,” says Erick Kobres, chief technology officer at **Revel**. Cardholder data on a mag-

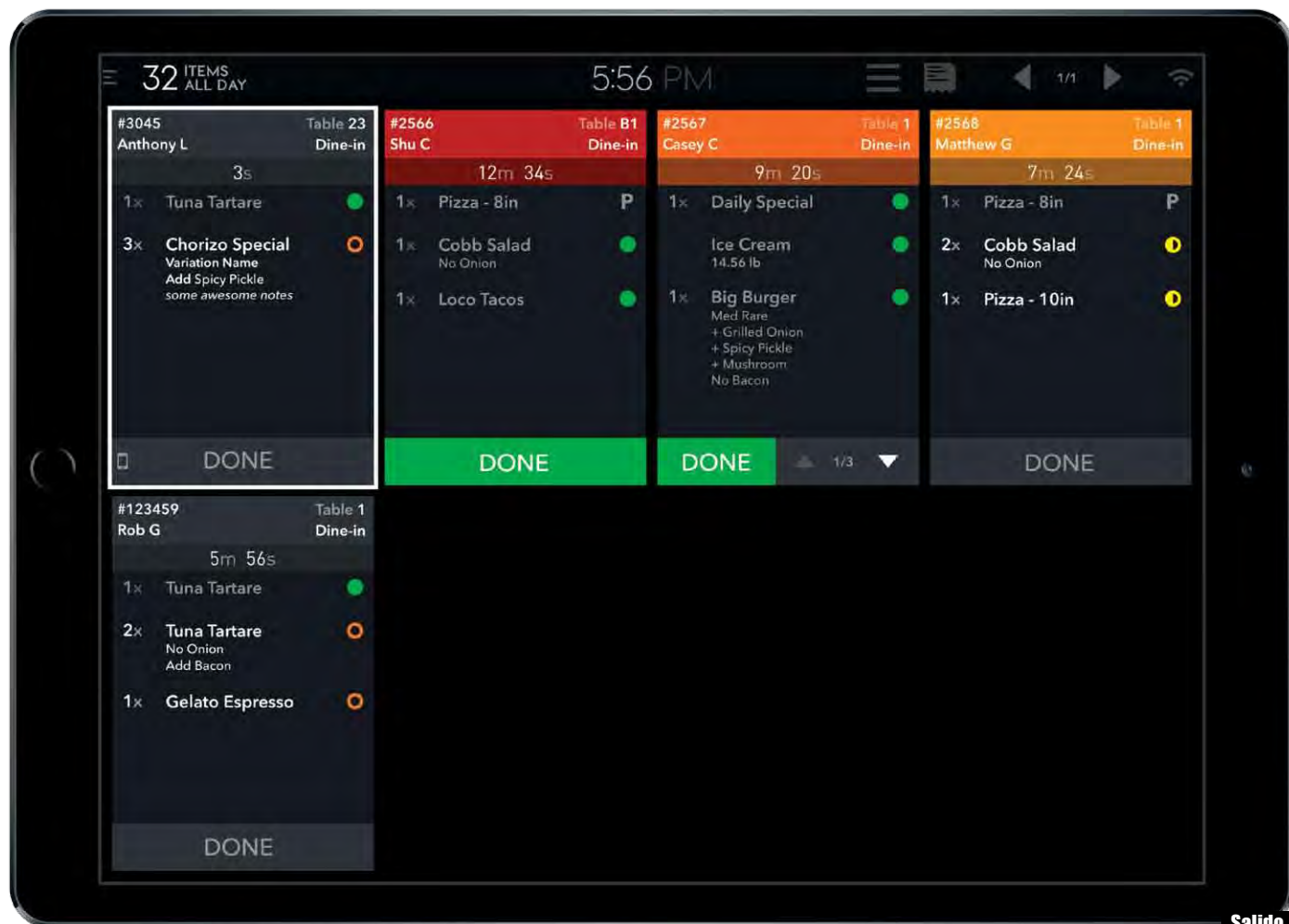
netic stripe can easily be compromised using these devices, whereas EMV technology—also known as “chip cards”—uses data embedded within the chip itself combined with a password to authenticate every purchase.

“EMV has long been the de facto payment technology abroad and has gained wide acceptance in full-service restaurant operations across the U.S.,” says Shu Chowdhury, CEO and founder of **Salido**. However, quick serves have been slower to

adopt the technology, due to EMV’s slower transaction speeds and lower chargeback risk. To address this issue, some processors are now offering quick chip support, which allows customers to quickly insert and remove their card in one or two seconds—the same amount of time it takes to swipe. “Ask the processor if they support this technology,” Chowdhury says, “and if not, push them to add it.”

As mobile payments increase, quick serves should also be mindful of card not present (CNP) fraud. The good news is that there are a number of tactics and best practices restaurants can take to prevent it. “The key is to take a holistic approach that incorporates a number of different solutions,” Kobres says. Be aware of abnormal online purchases, especially items that can be monetized, such as gift cards or merchandise, and large amounts that

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are atypical. “When this occurs, extra due diligence should be done on those types of transactions,” Godfrey says.

That due diligence should include requiring the customer to provide the three-digit card security code found on the back of the card or billing address verification for online transactions. Emerging solutions like artificial intelligence and machine learning can also help detect fraudulent behavior and unauthorized transactions via e-commerce channels. Merchants should also use the “Verified by Visa” and “Mastercard Secure Code”

holder’s actual data. Operators should also have a trusted, dependable firewall in place. Hackers use bots to scan for security vulnerabilities, and smaller businesses without large IT teams in place are an easy target. Firewalls help protect merchants by monitoring ingoing and outgoing traffic on a private network, while simultaneously scanning for suspicious access attempts.

Software, including operating systems, POS applications, and third-party applications should be kept up to date at all times—all are potential areas of vulnera-

just a preferred partner.”

When working with a processor who doesn’t provide a security solution and requires use of a third party, make sure to carefully evaluate the incremental costs. Will the business be billed directly, or as a pass-through charge? Who in the organization will be negotiating the sale of the solution? Ensure everyone in the company understands all of the costs involved, what amounts will be billed, and who it will be billed to before signing on the dotted line. “Ask if they are providing the most up to date standards for securing cardholder data, and how will they make sure to maintain this structure,” says Joe Pellar, senior product manager of SMB Product for Worldpay. “The payment processor is always thinking about enhanced security features, so do not be afraid to ask them how they prioritize security and what they’re doing to advance it without negatively impacting the customer experience.”

Cloud-based POS solutions are now the industry standard, as local POS systems are much more vulnerable to attacks. In the cloud, a restaurateur’s customer data can be broken down into two types: customer profile for CRM and customer transaction data. “Well-constructed POS systems store CRM data in the cloud server and handle credit card data in the payment gateway,” says Doocheon Jeong, senior vice president of sales for **UP Solution**. “Restaurant owners should demand information from POS vendors to ensure that sensitive data is handled appropriately with sufficient protections in place to protect from breaches.”

As POS technology continues to evolve at a rapid pace, quick-serve owners can look forward to many more exciting innovations in the coming decade. AI and machine learning will continue to advance the industry, and as hackers become more savvy, the businesses who provide POS solutions must adapt to the new challenges. “Be prepared to adopt the latest technology and devices from the payment processor, as security standards are driving product evolution in that space,” Crook says. “And be prepared to sacrifice some convenience for a business strategy that prioritizes security.”



options for an added layer of enhanced security.

Lee Crook, senior director of project management at **PAR Technology**, says that quick-service operators should ensure their online ordering, mobile ordering, and POS vendor partners are PCI-compliant as well. “For in-store transactions, it’s best to only deploy semi-integrated payment devices that do not share any card data with the POS or any other system within the store,” he says. These semi-integrated payment devices typically use tokenization—a process that converts sensitive cardholder data into unique characters and symbols—so that only a “reference token” is shared through the restaurant’s POS and online ordering software. In the event that hackers did infiltrate the system, they would only see a jumble of characters instead of a card-

bility. “One of the first lines of defense is ensuring the POS is synced with the latest software updates,” says Erick Kobres, chief technology officer at Revel. “These typically include security advancements and patches that can shield vulnerabilities from hackers and help businesses stay one step ahead of the latest threats.”

In terms of payment processing, quick-service operators should ensure that encryption is used to transmit all payment data securely. If possible, it’s best to work directly with a processor instead of a reseller—the fewer channels the information has to go through to be processed, the better. “There are still a number of processors who don’t use encryption to protect data,” says Larry Godfrey, vice president of payment and terminal at Heartland. “Verify the POS provider allows you to choose the most secure processor and not

Choosing the Right POS System

Not all point-of-sale solutions are created equal.

Whether a restaurant owner is opening a first restaurant or dozens of franchise locations, choosing the right POS system is one of the most important decisions he or she can make with regard to operational management. With the multitude of choices in the space, having the right system in place is critical to your business's success.

When selecting POS systems, it is essential for quick-serve operators to think long-term. Don't choose on name recognition or referrals alone—do your own extensive research, ask around about what other restaurant owners are using, read reviews, and carefully consider your restaurant's unique challenges and needs. "There are plenty of solutions that can transact guests and offer some reporting features out of the box," says Aaron Miklosey, product manager at **SICOM**, "but not every solution is ready to scale to hundreds or thousands of locations."

It's also essential to choose a POS system designed with restaurants in mind, as features can vary greatly depending on the system. The system should be designed from the ground up for the unique needs and work flows of a busy foodservice establishment, not an adaptation from a retail or other unrelated business POS. "A well-designed POS system has features and functions, such as reporting, inventory management, customer management, employee tracking, appointments, delivery management, and more that are tailored to the client's specific industry," says Doocheon Jeong, senior vice president of sales for **UP Solution**.

Even within the restaurant industry, some POS systems are better suited to quick serves than others. Ask what niche is best serviced by each system. "Each POS



“Strong warranty coverage for hardware peripherals is very valuable in high-transaction volume environments to assure the lowest cost of ownership of the hardware elements.”

system has a restaurant type that it best services,” says Jeremy Julian, chief operating officer of Custom Business Solutions at **NorthStar POS**. “Most POS providers will say they service all types of restaurants, but the good ones know where they are strong and where they are deficient.”

Search around until you find the system that is best-suited for the type of restaurant you are operating.

When it comes to infrastructure, restaurants need a complete, cloud-ready POS system that supports every aspect of their business, including hardware, oper-



“The POS system should be there with you at a counter, at a window, over the phone, and online.”

ating systems, application servers, database technology, and industry-specific software. The system should have the depth of functionality that allows the company to achieve its financial goals, as well as transparency around total cost of ownership to avoid surprise costs and high credit card fees. As for hardware, it should be durable enough to withstand the unique challenges of the restaurant environment—heat, water, grease, drops, and being moved around and taken outside if it’s a tablet-based system. “Strong warranty coverage for hardware peripherals is very valuable in high-transaction volume environments to assure the lowest cost of ownership of the hardware ele-

ments,” says Ivelisse Gomez, senior manager of new product development and marketing at **MMF POS**.

Futurist thinking should be top of mind when selecting systems. Modern POS has many layers of functionality, but a well-designed system is built on a solid foundation that allows for future integrations. It’s essential to make the right architectural decisions that anticipate where the technology and industry are going in the future. “There are integrations coming down the road we don’t know about yet, so a well-designed POS system will be open enough to pivot and add future integrations while maintaining a cost-effective system that meets all the current needs of quick-service restaurants,” says Aaron Miklosey, product manager at **SICOM**.

Flexibility is also key. For quick serves specifically, the POS system must be able to accommodate the ever-changing ordering and payment landscape. “The POS system should be there with you at a counter, at a window, over the phone, and

online—all the while allowing for a multitude of modifications and tracking sales, schedules, and everything in between,” says Michel Cote, senior vice president of partners and products at **Posera**.

Armed with the knowledge of what makes a good all-around POS system, quick-serve operators can then determine which is best for their particular restaurant. First, determine the primary drivers: cost, service, customer experience, streamlining specific operations, or perhaps enticing a certain demographic. “Conduct research to determine which POS solution will best fulfill those objectives now, and that also has a track record of continually and seamlessly incorporating the latest technical innovations,” says Alex Barrotti, CEO and founder of **TouchBistro**.

Other influencing factors include considering the current network situation, whether you

need an all-in-one POS or a basic system with add-ons and integrations, and if you already use a loyalty or employee management system. “Those things will help drive conversations on POS options,” says Joe Pellar, senior product manager of SMB Product for **Worldpay**.

Another question to ask early on is if the POS system has an associated payment processor. If it is tied to a specific processor, proceed with caution. “While this seems convenient in theory, being tied to one processor can mean that you are at the mercy of that vendor,” Julian says. “If they decide to raise their rates or increase costs, you are stuck with what you have until you replace your entire POS system.” Keep your options open, as payment processors also offer varying levels of pricing, customer support, fraud prevention, security tools, and other services. Don’t hesitate to inquire about the processor’s funding, as many are funded by venture capital. While this is not an issue in itself, it can make things challenging if the company isn’t hitting its numbers.

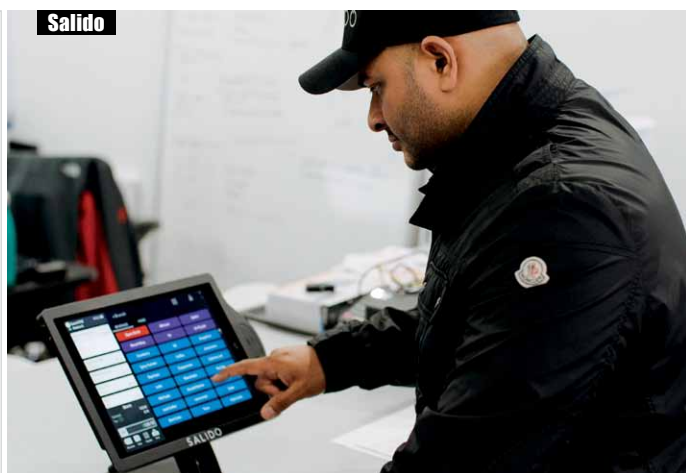
Once the architecture of the system is addressed, it's time to get into the details. Quick-serve operators know their business better than anyone, and therefore know the pain points and deal-breakers for their specific establishment. For example, some concepts require seamless integration between POS terminal and the kitchen. Other restaurants have one or more rushes during the day and need line-busting or self-service kiosk options. Some have complex menus and need granular inventory tracking and the ability to build

ment of a restaurant's POS system. "This should include features like smart condiments where the condiments are color coded to make it clear what's already included on a sandwich and what can be added," Miklosey says. "Features like this tap into preconceived notions of color, touchscreens, and navigation, so the user is guided through the process and it feels natural and easy."

Small visual depictions of menu items with prices and allergen information, daily menu specials, food prep qualifiers, and

tem should also be taken into consideration. "Cash drawers and lockable payment terminal stands are integral parts of the POS systems," Gomez says. "They help with asset protection, improvement of transaction accuracy and efficiency, and can enhance checkout speed."

The POS software should also be able to capture valuable analytics on customer behavior for use in multi-channel campaigns and across an organization. "A well-designed POS system should not only increase efficiency and accuracy,



combos. Still others have a robust marketing program that needs a strong customer relationship management (CRM) for support. "Make sure to ask questions about the functionality that's most important to your restaurant," says Erick Kobres, chief technology officer at Revel. "In terms of 'table stakes,' ease of payment processing, data and payments security, how the system handles internet and other outages, and how often the system is updated are all great questions to ask."

Quick-service operators should also determine their specific needs surrounding user interface and user experience (UI/UX). "A well-designed system answers those questions differently for a restaurant with a patio and large dinner service than a lunch-heavy quick serve in a business park," Pellar says.

Touchscreen technology has completely transformed the user experience over the past decade, and careful thought should be given to this critical compo-

"A well-designed POS system should not only increase efficiency and accuracy, but provide robust reporting tools to help merchants analyze their businesses."

upsell options should all be designed right into the POS, and even complex actions like bill splitting or combining orders should be able to be executed with a simple tap or swipe. The aim is to simplify the order process, eliminate costly and time-consuming mistakes, capture more potential sales opportunities, and lower training costs while allowing employees to better focus on the guest in front of them.

Security features within the POS sys-

but provide robust reporting tools to help merchants analyze their business," Jeong says. "It should not only provide solutions to help the front-of-house operations, but also solutions to help with the back-of-house management."

Choosing the right POS system for your restaurant is one of the most important decisions you will make, and what works for another restaurant—even a seemingly similar concept—may not work for you. The POS is the backbone of a quick serve's operations center, so do your research, explore several options, and choose wisely.

"The best POS systems manage loss prevention, order delivery, food cost, labor cost, speed of service, customer loyalty, customer communication, tax management, and compliance," says Lee Crook, senior director of project management at **PAR Technology**. "Most of all, it gives you the ability to make better business decisions."