



CASH TRANSACTIONS IN A MOBILE WORLD

AN ISV OVERVIEW

Introduction

For two decades, the PC has reigned supreme over POS solutions, operating as point of sale terminals that sit on counters and control various peripherals. However, the need for PC-centric solutions is waning as a more flexible POS model emerges. Leveraging cloud and mobile technologies, this model supports thin client and IP-enabled components such as cash drawers and printers.

The new model is more affordable, flexible and manageable, and significantly improves the shopping experience. It's a mobile world, after all, and tying the cash drawer to fixed POS stations no longer makes sense in settings where retailers want to offer the convenience of completing transactions at the "point of decision" — literally the place in the store where the customer gets the item and makes the decision to purchase — instead of making

shoppers stand in line at a counter.

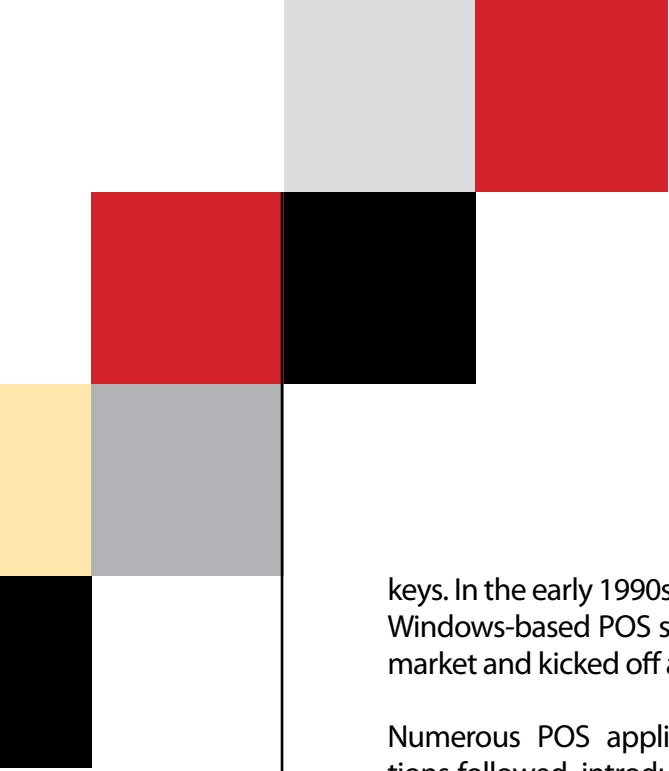
For POS ISVs and systems integrators, this new model presents a vast new opportunity to add value for customers in retail, restaurant, hospitality and other verticals that use cash transactions. ISVs and integrators stand to expand their market reach and increase profits by designing and customizing IP-enabled systems, and offering customers service plans with recurring-revenue opportunities.

From Cash Registers To PCs

In the early 1970s, computerized POS solutions started replacing the cash register, a 19th Century invention that is now more likely to reside in a museum than a store counter. In the 1980s, IBM introduced proprietary PC-based solutions. Early POS solutions were ROM-based systems created by NCR, DTS, and IBM with touch buttons that replaced cash register

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keys. In the early 1990s, the first Microsoft Windows-based POS system entered the market and kicked off a POS revolution.

Numerous POS applications and solutions followed, introducing new levels of customization and functionality specific to the needs of retailers, (big-box, specialty, boutique or mom and pop,) and hospitality (QSR, table service and fine dining). At the center of the typical POS solution is a fixed PC-based station equipped with a cash drawer. The station controls various wired peripherals — printers, barcode scanners and payment card readers — connected to dedicated ports on the POS station through serial or USB interfaces.

The PC for years has remained at the center of the solution, effectively serving as a computerized cash register and controlling the various peripherals. In multiple-workstation environments, POS stations connect to a server at the backend. These typical setups can be costly, especially for smaller retail shops, and in some cases require a fair amount of configuration.

POS Game Changer

Today, a tablet revolution is taking place, with the Android, iOS and Win8 operating systems leading the way. The days of the “fat client” PC-centric POS solution are numbered, thanks to cloud computing



and the increasing capabilities of mobile devices such as tablets and smartphones. A recent Boston Retail Partners study found retailers view mobility as a priority, with 52 percent planning to implement a mobile POS solution within two years. Another 19 percent said they plan to deploy mobile solutions in two years or more.

Thanks to the Internet, consumers are accustomed to shopping in the convenience of their own home, and they want convenience at retail locations as well. Retailers realize they can and need to improve the shopping experience by leveraging cloud and mobile technologies. Why make customers queue up at a counter when you can complete a transaction at the point of decision? For example, a sales associate can initiate a transaction on a tablet in a dressing room, accept a credit card or cash, and complete the sale at a strategically placed cash drawer for a mobile checkout experience. Using

the tablet, the associate can complete the transaction and print or email the receipt. Shoppers who enjoy convenience and speed leave the store happier and are more likely to return for future purchases.



This level of convenience and flexibility is hard to achieve with a POS system constrained by fixed workstations. If components such as cash drawers, printers, and barcode readers are IP-enabled and communicating wirelessly, there's nothing stopping a merchant from offering this kind of flexible service. Store clerks can run transactions from thin-client tablets or smartphones. Where required, security cameras and digital signage displays can be integrated into the POS system, creating a compelling and secure customer experience. POS systems with thin clients and IP components aren't for everyone. Big-box retailers, category killers and supermarkets will continue to need fixed checkouts, but they can leverage mobility in specialty departments, such as shoes, electronics or specialty wine/cheese. In boutique and specialty shops, where a lot of interaction

takes place between clerk and patron, this new model is sure to gain traction.

Affordability And Familiarity

The new, thinner POS model is a viable alternative for deploying fully functional POS systems that are far more cost-effective than the traditional POS. Though prices vary, a typical "fat client" POS workstation costs around \$3,000. A five-unit rollout would cost \$15,000, a hefty price tag for a small retailer.

In comparison, a five-unit deployment with \$400 tablets costs under \$2,000, and the units are easier to use and have a lower replacement cost. Of course, components such as cash drawers and printers carry their own price tags, but being IP-enabled, fewer are needed because they can be shared. Assuming two IP printers and cash drawers are deployed, the cost of the same five- "station" POS system would be closer to \$3,000.

Besides lower costs, IP-enabled POS systems have another advantage — familiarity. Users of tablets and smartphones require less training for similar devices in the workplace. Furthermore, a mobile POS lets retailers stand out from the competition by improving the shopping experience, translating to higher customer loyalty.

ISVs And Integrator Benefits

A new POS model is emerging: "thinbility,"

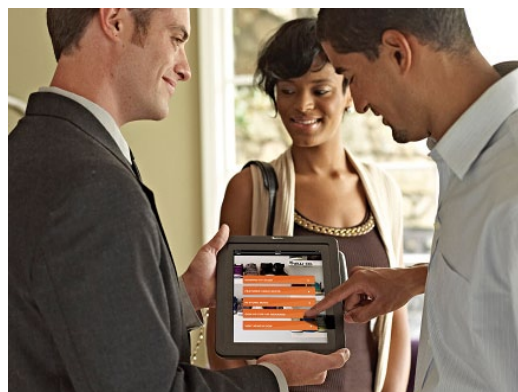
a combination of thin client, mobile and cloud-based technologies. With thinbility, come new value-add opportunities for ISVs and system integrators. Those who jump in early will lead the pack, and increase their chances of attracting new customers and retaining existing ones who want to adopt the model.

It is up to ISVs and integrators to make all of the IP-enabled POS components work together, lifting the constraints of the PC-centric approach by enabling thin clients to communicate wirelessly with cash drawers, printers, scanners, and payment terminals. ISVs and integrators also add

more value by integrating security cameras and digital signage screens into unified POS systems.

ISVs and integrators can further up the ante with customization options. Boutique retailers, restaurants and convenience stores have different needs, and being able to address those needs is bound to pay dividends. Through consultation with users, ISVs and integrators can learn their customers' priorities and design systems accordingly. For instance, they can customize POS screens by giving prominence to the most used buttons to guide store clerks quickly through transactions.

Another benefit of the new POS model is rapid development, configuration and deployment. Developers need only a few weeks to get a thinbility-based system



up and running, as opposed to months with the PC-centric approach, regardless of operating system and hardware choices. Whether systems involve thin clients, tablets, kiosks, or a combination, development is quick. Combined with system functionality and affordability, development and configuration speed help ISVs and integrators stand out from the competition, potentially reducing the sales cycle and turning the prospect into a revenue-generating account.

Service Opportunities

PC-centric POS systems offer plenty of service opportunities, but those opportunities don't go away with the thinbility approach. Standalone IP-based cash drawers have features that service providers can leverage to deliver customer service plans. The controllers that make the drawers IP-ready can be programmed for other functions, giving owners and store managers greater control over their use.

Monitoring and remote control capabilities enable exception management and alerts that prevent misuse and notify managers of unusual events. If a

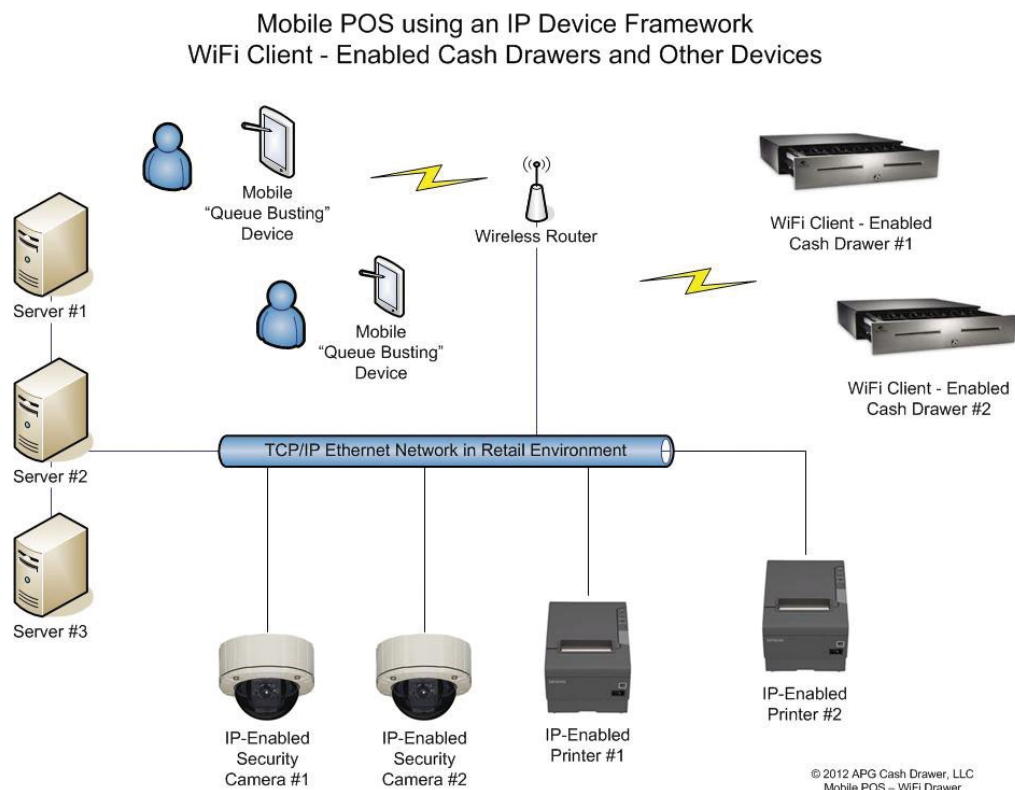
clerk opens the drawer manually with a key, even though a command from the workstation would normally open it, the system captures that activity. By reviewing the information, managers can determine if the exception was legitimate or ill-intended. Further monitoring is available with time-stamp processing. A cash drawer that remains open for a long time can indicate a security or training issue. A timely alert sent to management via email or text can solve this problem fast.

Controllers also keep track of when a drawer is unplugged or moved — or if it is opened by someone who is assigned to a different drawer. To prevent that, drawers can be programmed to open only for authorized employees. Again, the exceptions can be instantly reported to management for corrective action.

The drawer system collects plenty of valuable data, which when used for reporting and analysis, can lead to operational improvements and help correct bad habits. From a service provider point of view, this translates to delivering systems with monitoring and reporting capabilities that can be turned into revenue-generating service plans. Plans can be built around periodic system checkups, reviews of collected data, and recommendations for business improvements.

APG IP-enabled Cash Drawers

IP-enabled cash drawers are a fundamental component of the thinbilty approach, delivering new levels





of functionality to any environment where cash transactions take place. APG Cash Drawer LLC leads the industry in IP-enabled cash drawer innovation, offering multiple configurations, sizes and colors for use in a range of industries, including retail, hospitality, restaurants and convenience stores.

APG's fully customizable IP drawers release businesses from their dependence on expensive PC-centric systems. Software development kits (SDK) and detailed demonstration programs are available to ISVs and integrators to develop and customize POS solutions to client specifications, regardless of operating system or hardware choices. SDKs are available for the popular Android and iOS mobile platforms.

APG IP-enabled drawers connect to other system components via wireless and wired Ethernet. The APG NetPro Model 480 series supports WebSocket Protocol and API methods, making the

drawers compatible with browser-based applications — a feature tailor-made for retailers interested in managing systems through a web interface.

Programmable features and reporting capabilities in APG's IP-enabled drawers create a wealth of service opportunities for ISVs and integrators looking for recurring-revenue sources. In leveraging the rich functionality of the drawers, ISVs and integrators have a significant opportunity to add value for customers and boost profits for themselves.

Conclusion

Whether the new solution is mobile or thin, the future is here. In retail, and wherever else cash transactions take place, mobility will have a starring role. IP-enabled cash drawers linked wirelessly to other IP components offer businesses an ideal solution to leverage mobility. The ISVs and integrators who serve those businesses have a tremendous opportunity to improve profitability and add value by developing affordable, lightweight systems that leverage APG's feature-rich IP cash drawers.

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About APG Cash Drawer, LLC

APG manufactures a broad range of high-quality cash drawers and other related products for thousands of customers throughout the world. During its 35+ year history, APG has built a reputation as the supplier of choice for highly durable and dependable cash drawers. To learn more about APG products, visit <http://www.cashdrawer.com> or call 763-571-5000.