Raspberry Pi

Customer story

KwickPOS:
Raspberry Pi-based point of sale system is a hit in restaurants and retail

Low-cost, powerful, compact, and stable, Raspberry Pi Compute Module supports a smooth point-of-sale solution with uninterrupted uptime for thousands of KwickPOS customers across north and central America.

Raspberry Pi solution	Compute Module 3 Compute Module 4
Size of business	SME
Industry	Retail solutions

Houston-based KwickPOS had its first customer before it even began trading back in 2003: the owners of a Chinese restaurant looking for a slick means of fulfilling customer orders approached their IT developer friends Tom Jin and Ming Ye. Keen to oblige, Jin and Ye, who have 20 years' experience in Silicon Valley developing restaurant software, quickly set about creating a Linux-based point of sales system that could display and process orders.

Having started out with Chinese food restaurants — "the most challenging restaurants to manage from a menu perspective and from an organisational feedback point of view inside the restaurant," suggests Ming Ye — word soon got out among other restaurateurs. Demand was sufficient for the concept to become a business venture.

The challenge

Turning a successful and in-demand point of sale system into a fully fledged business was a leap of faith for Jin and Ye, given their existing careers in Silicon Valley. Nonetheless, in 2015, having built a number of the systems, they decided to turn KwickPOS into a "true business", developing and selling POS systems from their Houston, Texas HQ. Having added back office support and service strategies to the POS product, they began growing their business via channel sales, distributors, merchant services, and other organisations that require sales processing capabilities.

Expensive Windows-based servers and kiosks had their limits, however, not least the cost and value to thieves of the hardware. They also take up quite a bit of room. "Some restaurant point of sale systems have three or four terminals, one of which is the actual server," explains Ye. In more than one instance, the laptop or desktop computer has fallen foul of an opportunist thief, leaving the business concerned with no way to take and fulfil orders.

Another issue for retail and restaurant environments is what happens if the internet connection goes down, a legitimate concern in parts of the US where power outages are not uncommon. With more and more orders arriving via email or online, business continuity and uptime are more critical than ever, as is the ability to process payments.

The solution

With the launch of Raspberry Pi, Jin immediately saw the potential of running KwickPOS on the platform, using it as a server as well as a discreet but powerful terminal in often cramped customer kiosks and restaurants, where dining space and the number of restaurant covers need to be maximised. Since the business's existing back-end software had been Linux-based since 2013, making the switch to Raspberry Pi made good commercial sense, especially since Raspberry Pi Compute Module cost only one tenth as much as a Windows environment. KwickPOS was able to make full use of Raspberry Pi for its cloud-based server.

Unlike most POS systems, KwickPOS is browser-based, with a server on site — something the Compute Module's compact size allows for — and the POS application display on the terminals is replicated to the cloud. A Raspberry Pi server inside each terminal processes payment data. This setup has a crucial advantage: offline mode. "If the internet goes down, that's fine," says Ye. "The manager can log in from the terminal, put it in offline mode and continue to operate the restaurant." When the internet comes back, they put it into online mode and any transactions that have already been processed will be replicated and finalised for the restaurant. "Uptime is a very strong competitive argument".

Why Raspberry Pi?

Jin values the fact that Raspberry Pi Compute Module is so stable. He's frustrated by the continuing idea that using Windows is "like the law" for businesses, with many customers still using it, despite its server routinely proving to be the weak point in their setup. KwickPOS services use both Compute Module 3 and 4.

> Raspberry Pi Compute Module cost only one tenth as much as a Windows environment

From a customer point of view, using Raspberry Pi is a great choice too. "Customers are very happy with this device," says Ye. For a start, it doesn't take up much room in an inevitably cramped restaurant service area and is discreet enough not to attract the attention of opportunist thieves. In the rare case a unit has been stolen, the business can continue to operate since the Raspberry Pi web server takes the strain. As well as ensuring the business doesn't lose out financially due to lack of connectivity, the system still operates as though it were connected, and the customer can drop in a like-for-like replacement unit without losing any data.

KwickPOS has also expanded its customer base to include boutique retail stores. As with independent restaurants, the need to quickly and efficiently take and process orders is paramount. Importantly, KwickPOS is platform-agnostic. With handheld payment terminals now commonplace, KwickPOS is able to slot in to a store's existing setup.

The results

Since making the switch to Raspberry Pi in 2018, KwickPOS has grown to become an organisation that has customers across 45 US states, as well as in Canada and Mexico. There is even a Chinese restaurant in London, UK using the system. The company now has over 2000 customers with KwickPOS systems within their restaurants, ranging from single units to retail chains.