Software-based, hardware-based, or OEM: what's the right barcode scanning solution for your operation?

All good things come in threes, so how do you choose the right barcode solution
Read time: 3 min., 10 sec.

Since the invention of barcodes in the late 1940s, barcode scanning technology has evolved tremendously. The first-ever barcode reader was the size of a desk and required a massive amount of external computing equipment. Now, smartphone users have a powerful, pocket-sized scanning device perpetually at their fingertips.

For many organizations implementing a barcode system, smartphones are a game-changing (and incredibly beneficial) development in scanning technology. But some use cases and industries still require more traditional barcode solutions with dedicated scanning hardware. Like all good things, barcode systems typically come in three forms you can choose from:

Figure 1: Firms reliant upon shift work gravitate toward wired & wireless scanners.

- software-based scanning
- hardware-based scanning
- original equipment manufacturer (OEM) solutions.

Download and Go: Software-based Scanning Solutions
The ubiquity of smartphones and other mobile devices makes it easier than ever for developers to create or integrate barcode reading into their app or system. After providing the necessary software on company-issued phones or for their users' own devices (a "bring your own device" scenario), organizations can get up and running quickly, with minimal upfront expense. And since users are already familiar with the technology and its interface, little to no training is required.

Low costs and ease of deployment aren't the only reasons companies choose software-based scanning solutions. The shift to a new model can unlock unexpected business benefits.

Figure 2: Software trims costs for many firms.

For example, CompuSystems supports some of the world's largest trade shows and expos by providing fast, efficient badge-scanning capabilities to register thousands—sometimes hundreds of thousands—of attendees, gather sales lead data, and provide accurate analytics to exhibitors. After years of making sizable investments in scanning hardware, the company wanted to move to a software-based solution to trim costs.

Teaming with Code Corporation, CompuSystems implemented Code's CortexDecoder software development kit (SDK) into a new mobile scanning solution that includes sales lead retrieval. In addition to eliminating the need for costly hardware, the system improved the company's scanning speed, enhanced data capture accuracy, and received rave reviews from attendees and exhibitors alike.

Ready for Nursing Rounds & Shift Work: Hardware-based Scanning Solutions
While software-based solutions offer companies quick and effective access to barcode scanning, some environments demand traditional scanning hardware. For instance, warehouses, logistics, and manufacturing facilities require scanning technology designed with varying levels of water- and dust-resistant housings. Devices that can withstand drops on concrete are also highly favored. Additionally, these dedicated scanning devices provide ergonomic grips and long-lasting batteries for long shifts and uninterrupted operations. Plus, security concerns may come into play for some companies—unlike smartphones, barcode scanners remain in the work environment.

Purpose-built hardware also has a place in healthcare organizations. These organizations have stringent infection protocols that call for patient care devices, like barcode readers, to be thoroughly disinfected between uses. Barcodes scanners were also in the field as the 2020–21 COVID-19 pandemic took hold because they were used to track testing samples and results. Data capture devices were also instrumental in tracking mass-vaccination efforts.

Working to develop point-of-care testing for the virus, a leader in molecular diagnostics incorporated Code Corp's CR1500 image-based scanner devices into its solution. In addition to offering industry-leading speed and accuracy, the scanners are housed in industry-exclusive CodeShield® Plastic. This plastic is comprised of densely packed molecules that can't be penetrated by caustic cleaners and sanitizing agents, meaning they won't crack over time and cause the barcode scanners to fail prematurely.

Have it Your Way: OEM Scanning Solutions
If barcode scanning is part of your organization's workflow but no established scanning system perfectly fits your specific needs or requirements, a custom OEM solution may be the best option. This is because OEM scanning solutions, whether it's software code or a small mechanical component, can be "baked" into your product, machinery, or process. Companies use OEM barcoding systems for a broad range of specialized applications across the airline, banking, entertainment, event, lottery, and manufacturing industries—just to name a few.

At the onset of the 2020–21 coronavirus pandemic, Çizgi Teknoloji, a technology and automation firm in Turkey, was tasked with creating a check-in solution to help hospitals regulate the density of visitors in high-traffic areas. At the core of its custom offering, the company needed high-performance barcode reading technology with near-zero miss accuracy.

Utilizing Code's CR8200 miniature scanning engines, the firm developed self-service kiosks for seven new hospitals. Expediting routine processes, providing directions and test results while reducing service queues, the kiosks helped stem virus transmission. Plus, hospital staff have a more comfortable environment—and more time—to perform other critical tasks.

Figure 3: Software trims costs for many firms.

Choosing the Right Solution is as Easy as Contacting Code
If you have questions about choosing the right barcode scanning solution for your organization, Code has the answers. Our experts can help you pick between a software-based, hardware-based, or OEM solution and guide you in specing your system with the right data capture product(s). Start by contacting us today at info@codecorp.com or 801-495-2200.