

### Abstract

With a changing economic landscape, temporary and mobile workers are fast becoming the norm. Tracking these workers through traditional means such as physical badges or paper timesheets has proved problematic for companies in a wide array of industries, staffing agencies being chief among them. A simple, cost-effective alternative to these conventional methods of workforce management can be found in QR code technology optimized for use as electronic badges.

### The Challenge

Companies that utilize a temporary and mobile workforce face the twofold challenges of management and cost. The goal for these companies is connecting the right candidate to the right company, but these companies face certain obstacles when trying to place workers. For example, a staffing agency must maintain a talent pool that is large enough to support the companies for which they are contracted. The larger the pool, the more difficult it is to track individual workers. Costs also rise with an increased talent pool as conventional badges must be purchased and issued to each worker. These costly badges are tied to each worker, and are used to verify clock-in/out at the job site. Once the job is complete, these badges are either lost or unreturned, so a surplus of new badges must be stocked for future workers.

Day laborers also pose similar challenges since it is not realistic to always provide a physical badge to this unique workforce. Day laborers are largely mobile and routinely perform different jobs for different employers on different days. For example, if a laborer is ready to work—and near the job site, but far away from the staffing agency—it is not feasible to pick up a badge before showing up at the job site.

### The Design

Quick Response (QR) Codes are machine-readable optical matrix barcodes that contain specific information about the item to which they are attached. A QR Code uses four standard modes (numeric, alphanumeric, byte/binary, and kanji) to efficiently store data, and these codes can be used for product tracking, item identification, time tracking, document management, and marketing. QR Codes can be printed or stored as an image on a smart phone.

### How the Electronic Badge Meets the Challenges

QR codes can serve as electronic badges that can be read by industry-leading timeclocks equipped with cameras to read the codes. Using this technology, a worker is assigned a unique QR Code which can be printed on a piece of paper or saved as an image on a smartphone—both options eliminating the need for a physical badge. The QR Code can then be used to clock in/out at a specific job site.

Equipped with a camera to capture QR codes, NOVAtime's NT7000 and NT65M timeclocks can meet the challenges of companies in need of a simple and cost-effective solution for managing their temporary workforce. In addition to supporting electronic badges for clocking in and out, these clocks can be used to restrict punches by linking a specified punch timeframe (i.e., Start date/time to End date/time) with the QR Code.

### QR Code Design

Below is an example of a QR Code. When read with a QR reader or QR-equipped camera, the QR code below will direct the user to NOVAtime's website (<http://novatime.com/>):



### NT7000 Touchscreen Smart Timeclock with Camera

In addition to capturing QR Codes with its built-in camera, NOVAtime's NT7000 also includes the following clock in/out options: bar code badge, mag stripe badge, proximity badge, key-in, or biometric fingerprint verification.



### NT65M Mobile Clock with Camera

Compatible with QR Codes and barcode badges, the NT65M is a portable solution with Wi-Fi and Wireless WAN capabilities in a rugged package. Using the NT65M, employees can punch in and out, perform transfers, submit time-off requests, input leave hours, and input tips.



## ***Conclusion***

With the high cost of badges and the rising demographic of mobile workers, NOVAtime leverages existing QR Code technology to offer a solution that is simple and cost-effective. Since QR Codes can be printed, it eliminates the need for companies to purchase and stock expensive badges. QR codes can also be sent and received virtually, saved as an image, stored with a specific clock in/out timeframe, and captured by the NT7000 and NT65M directly from the worker's mobile device.

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NOVAtime Technology, Inc. was established in 1999 and is headquartered in Diamond Bar, California. By applying the most innovative technology and providing best practice services, NOVAtime has become a leader in the Time and Attendance / Workforce Management industry. Over 10,000 organizations have benefitted from the use of NOVAtime solutions, and the world's best-managed companies continue to select NOVAtime as the preferred solution provider. For more information about NOVAtime, please visit [www.novatime.com](http://www.novatime.com) or call 1-877-486-6682.