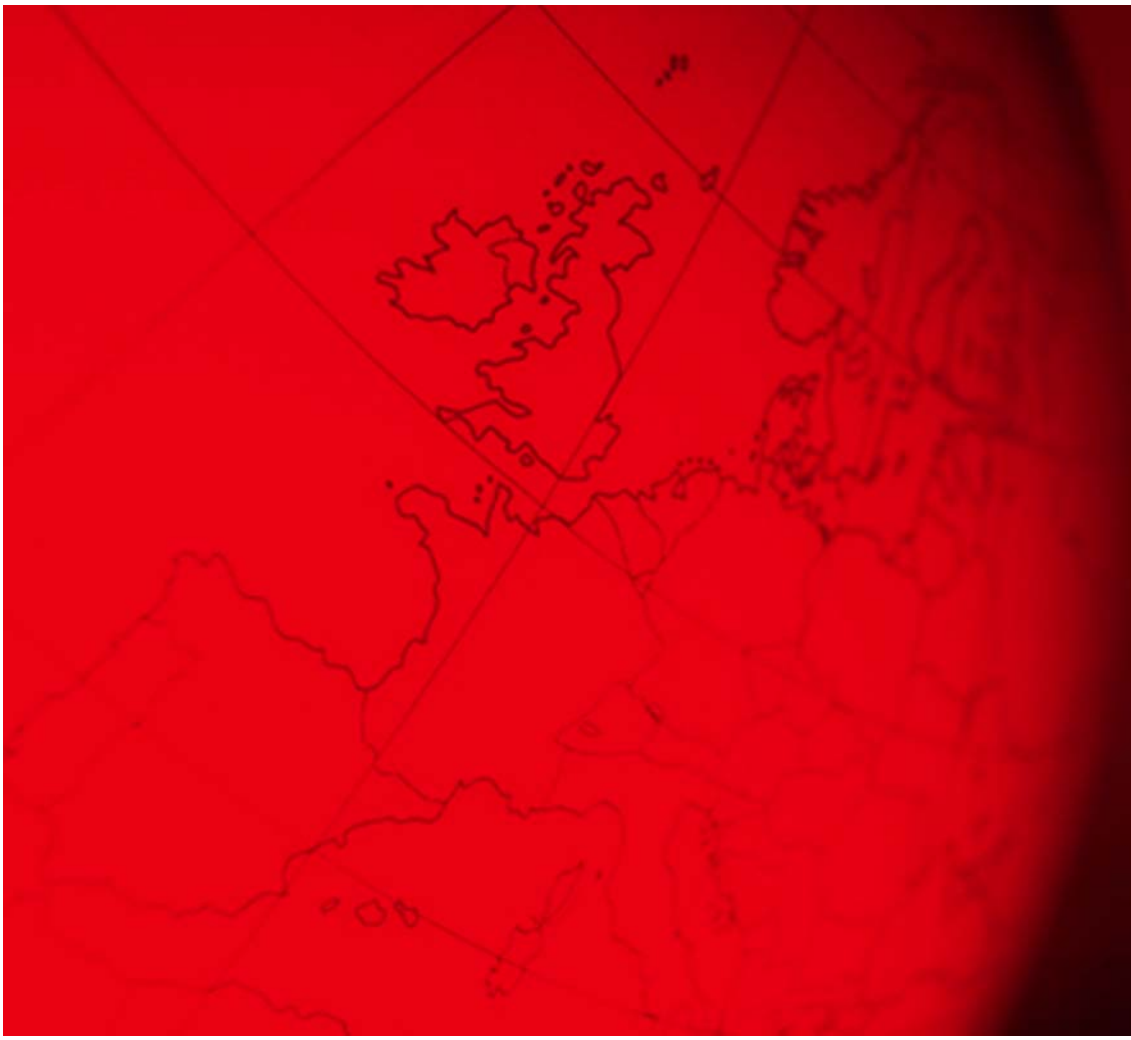
NUCLEUS
RESEARCH

April 2009

Document **I114**

REPORT
SCHLAGE HANDPUNCH



Corporate Headquarters
Nucleus Research Inc.
100 State Street
Boston, MA 02109
Phone: +1 617.720.2000

Nucleus Research Inc.
NucleusResearch.com

THE BOTTOM LINE

Using biometrics to automate collection of time and attendance data can reduce buddy punching, manual data review and correction time, and payroll error. The Schlage HandPunch provides additional benefits over other biometric technologies by using hand geometry to increase reliability and reduce privacy concerns. Deployed properly, HandPunch can deliver a payback in fewer than 9 months.

Payroll is a significant operating cost for many organizations, and given that a small percentage change in payroll error can have a significant impact on operating costs, companies have invested in time and attendance systems that help to improve payroll accuracy. However, traditional systems such as sign-in sheets or punch cards can be slow and error prone, and they don't protect companies from "buddy punching" — the practice of one employee signing in or out for another.

The Schlage HandPunch uses hand geometry biometric technology to improve the accuracy of time and attendance and eliminate the possibility of buddy punching. Rather than identify users by means of palm prints or fingerprints, which can be unreliable, the HandPunch registers the size and shape of an employee's hand and stores it in the system as a unique string of numbers. Employees enter a pin number or code and scan their hand to track their time worked. Features of the HandPunch include:

- Employee messaging and self service. The HandPunch can be programmed to display messages and menus based on individual employees' IDs and schedules, and keys can be defined to allow employees to view and enter specific information such as vacation time.
- Clock-based editing. Supervisors can enter a password to modify data entry points without accessing a computer.
- Bell and door scheduling. Employers can use the HandPunch to manage shifts and breaks and control access to facilities.
- Data integration. HandPunch integrated directly with human resources, payroll, and other applications to ensure accuracy and reduce manual data review.

This report analyzes the benefits from using biometric technology to support automating time and attendance processes. It also explores the additional incremental benefits of using hand geometry over other biometric methods to ensure privacy and greater data collection reliability.

BENEFITS FROM BIOMETRICS

Nucleus identified a number of benefits companies could achieve from deploying biometric technology such as the HandPunch to support improved labor and payroll management. Key direct benefits included reduced payroll error (through elimination of employee fraud) and reduced materials costs. Key indirect benefits included increased productivity, improved management reporting and visibility, and improved legal compliance.

Reduced payroll error and buddy punching

Reliable biometrics reduce the ability of employees to buddy punch or otherwise alter time clock and other payroll-related information. For example, one HandPunch customer found it was able to significantly reduce buddy punching by moving from paper time cards that could be shared or borrowed to the HandPunch system. "*In health care, you tend to find people do a lot of buddy punching*," the administrator said. "*I'm not sure what our savings were in terms of exact numbers, but I know it was significant*." Other customers found that moving from electronic badge systems to HandPunch eliminated buddy punching and also reduced the risk that an employee would lose or forget a badge — resulting in the need for error-prone and time consuming manual intervention by a supervisor or inaccurate re-reporting of work time after the fact.

The average payroll error rate is 1.2 percent of total payroll. Automating time and attendance and ensuring accuracy can considerably reduce payroll error.

Reduced or eliminated systems and materials costs

Companies moving from paper time cards to biometrics can eliminate the cost of the cards themselves, which average 5 cents per card, the cost of shipping for the cards, and the cost of storing cards — as well as reducing the environmental impact of a paper-based system. Those moving from an electronic badge system can reduce the cost of new or replacement badges.

Increased productivity

Deploying HandPunch enables organizations to reduce the time required for employee identification and punching in and out. It also reduces the time required to supervise the process and the amount of manual verification of information on hours worked. For HandPunch customers, this drove increased productivity in a number of areas:

- Improved management productivity. Automated data entry eliminates the need for manual review and correction of information on employee time cards or time records. Managers can easily compile and review employee time keeping activity, and department heads also can focus on more productive activities instead of manually approving time records. For example, one company with a paper-based time card system required each department head to physically deliver time cards to the payroll office at the end of each pay period to be checked and reviewed. *"Even though the clock added the hours, they had to be scrutinized,"* she said. *"It became an outdated thing."*
- Improved employee productivity. Rapid reliable timekeeping ensures employees spend more time on the job and less time punching in and out. One user noted, for example, that his company's old system depended on employees keeping their personal ID cards in working order, and often cards that had been bent or damaged didn't function properly — or employees forgot to bring them. Deploying HandPunch accelerated the sign-in and sign-out process, increasing the time employees spent working while improving morale. As one HR manager said, "*Most of the time when our people are leaving, it's all at the same time — and they would try to stop working to try to be first to punch out so they didn't have to wait. HandPunch takes only 30 seconds a*

person, and most of that time is people remembering their ID number and entering it."

- Improved administration. Automating time and attendance and payroll management using biometrics also reduces overall payroll administration time. At one municipal site, the city found it was able to redeploy more than one quarter of a person's time to other activities by eliminating management of paper time cards. Another payroll manager, for example, found her team was able to save more than 30 hours a week in time card review and processing time. Employee self service can help reduce the number of calls to payroll administrators about leave time and other payroll issues. One administrator found she saved one day a week by reducing incoming payroll inquiries.

The potential productivity savings will depend on the number of sites, complexity of payroll rules, and the frequency of time card tabulation and payroll calculation, as well as the level of sophistication of current time and labor management systems.

Improved management reporting and operational visibility

Automated collection and entry of time and attendance data with HandPunch enables managers to have better visibility into employee work habits and locations — resulting in better tactical monitoring as well as improved audit capabilities.

One user, for example, found that management could quickly identify if someone had punched in but didn't punch out, or had punched in at a different location, and immediately determine why instead of waiting until timecard data had been collected and entered. Another payroll administrator said having near-immediate access to information helped managers to determine if an employee had punched in in one department and then punched out in another. "*It's not a tracking device*," she said, "*but it helps us keep track of what department they're in*."

Managers can also perform weekly reviews of employee activity and see if some employees have erratic working hours or habits. Accurate data can help improve payroll budgeting projections, enable managers to better allocate employee resources, and help resolve audits and discrepancies more quickly. Nucleus also found that greater visibility for both managers and employees reduced employee concerns about favoritism in correcting or adjusting work time data.

Improved legal compliance

An accurate, auditable time and attendance tracking system can reduce the costs and liabilities associated with ensuring compliance with employment regulations and union rules and reduce the potential cost of fines or legal action. This is particularly important in organizations with union labor or those employing workers with specific work time limitations.

ADVANTAGES OF HAND GEOMETRY

Nucleus has found significant advantages from automating time and attendance systems; however, some traditional biometric technologies still have limitations. For example, fingerprint scanners may not recognize employees if their fingers are dirty or swollen, or if prints from others remain on the device.

Increased reliability

Companies moving from fingerprint scans to hand geometry have found the robustness of the technology makes it more reliable for a number of functional reasons:

- The HandPunch takes an image from multiple angles while a fingerprint scanner only take an image from one dimension. Residue left on a fingerprint scanner, such as smudges from lotion, grease, dust, or dirt, can create problems for the next user. The HandPunch is designed to work in such conditions.
- The HandPunch adapts its biometric template for a specific user over time, effectively learning to change as users change. Weight loss or gain, temperature changes, bandages, scars, and other changes will not impact the HandPunch's accuracy.

As one HR manager said, "*We work in a manufacturing environment and dirty is not uncommon — it's very common for people to have dirty hands from working in the plant all day, and with the fingerprint scanner I had to stand out there every day because there were so many errors*."

Companies moving from fingerprint scanners to HandPunch technology were able to increase accuracy by at least 50 percent.

Deploying a system with high reliability and accuracy also reduces the risk that employees will take advantage of inaccuracies to request manual corrections that inflate payroll, which Nucleus found some employees still did with fingerprint scanning systems. Companies moving from fingerprint scanning to HandPunch found an additional reduction in buddy punching and other attempts at fraud. As one administrator said, "*There is more control and there's no chance for theft.*" Another HR manager said, "*People will use any excuse when they're late but because the HandPunch was more reliable than fingerprint scanning I mandated the use of the HandPunch: you will prove to me in the system that you were here or you will not get paid. We still monitor the clocks but I know we've saved a fair amount on payroll overpayments because employees believe they will be caught.*"

Improved privacy

Most HandPunch customers were concerned about protecting the privacy of employees and ensuring the biometric data couldn't be used to recreate an image or in other unintended ways. After careful review of the HandPunch and alternative technologies, customers found:

- The HandPunch takes a series of hand measurements to establish a unique identity for each employee. Unlike some fingerprint scanning systems, the HandPunch doesn't store an image, but only a series of numbers that cannot be reversed into a hand image. The HandPunch technology cannot recognize fingerprints, tattoos, or other surface details that could be used to invade privacy.
- While fingerprint scanners do leave a latent print behind that could be used later without the user's knowledge, users scanning their hand with HandPunch don't leave any details on the size and shape of their hand behind that could be captured.

- Hand geometry technology as used by HandPunch is not used in the government and law enforcement's Automated Fingerprint Identification System (AFIS), so there's no link between hand geometry and the AFIS database.
- Policies can be designed to ensure that the data is used for its intended purpose, and clear communication about those policies (such as when former employee data is deleted) quells most privacy fears. As one HR manager said, "*I told people there's a very small file and no information that can be drawn from it. They were more concerned about being fingerprinted than in us taking a picture of their hands*."

Antimicrobial protection

Some employees raise concerns about the spread of germs at work, and any common equipment in a work environment (such as a doorknob or countertop) is a potential breeding ground for bacteria. Given the frequency of use of biometric time and attendance systems, and the fact that many employees are using them in rapid succession (at the beginning or end of a shift, for example), employees may raise concerns about spreading germs. To eliminate these concerns, the HandPunch platen is coated with an anti-microbial coating (the same is used on hospital equipment) that lasts for the life of the device and inhibits the growth and spread of microbes.

KEY COST AREAS

The main cost area for HandPunch is the initial hardware investment. Other areas to be considered include:

- Integration. If integration with other systems or complex pay rule programming is needed, Schlage has several business partners that can integrate the HandPunch with their software.
- Personnel. Some initial personnel time will be needed to support implementation of the system and integration with existing applications; in most cases Nucleus found the personnel time required was minimal.
- Training. Some initial training may be required for employees and managers to use the HandPunch system; however, Nucleus found that HandPunch is fairly intuitive to use and most companies find little training investment is needed.

BEST PRACTICES

To maximize potential return on investment from a HandPunch, Nucleus found organizations follow a number of best practices:

- They openly and clearly address user privacy issues. The actual usage of HandPunch will require little training; however, communicating to users that their ID will not be subject to privacy invasion and cannot be used the way law enforcement uses fingerprints will help ease adoption.
- They start with a pilot. Starting with a select group of employees to show how it can make punching in more streamlined and help them keep track of vacation leave, overtime worked, and other personal information can help resolve any questions and smooth broader adoption.
- They integrate HandPunch with other applications. The more uses of the HandPunch and the data it generates, the greater the potential ROI.

Integrating the system directly into back-end payroll and human resources applications can reduce data management time and errors and omissions and provide more value.

CONCLUSION

As companies look to better manage labor costs and improve operational efficiencies, automating time and attendance management is a key area for direct savings. Although many organizations have automated some payroll management tasks today, many remain challenged to ensure accuracy and eliminate buddy punching. In fact, three out of four companies experience loss from buddy punching. Nucleus has found employees are far less likely to attempt buddy punching or other fraud if they believe a system is reliable and accurate.

Deploying HandPunch virtually eliminates payroll errors associated with buddy punching and can deliver significant return by reducing the cost of payroll, particularly in environments where dirt, dust, wet conditions, or other circumstances limit the accuracy of fingerprint scanners. Companies supporting paper-based or badge-based systems today can also eliminate those system costs while improving efficiencies.

The scale of potential returns from implementing HandPunch will depend on the number of employees, facilities, and work schedules involved. Nucleus found that, deployed properly, HandPunch can deliver payback in fewer than 9 months; companies moving from paper card or badge-based systems are likely to see a more rapid payback from significant savings in materials and payroll overpayments alone.