Biometrics: Advantages for Employee Attendance Verification

InfoTronics, Inc.
Whitepaper

Biometric technology offers advanced verification for employees in every industry. Because biometric systems identify people through physical measurements of unique human characteristics or behavior, they thwart attempts of time fraud, where one employee punches for another. Biometric systems do not require easily-lost or stolen badges, or other identifying objects. Employee attendance verification is a major use of biometrics today.

Biometrics is the science of using human measurements to identify people. Today, an individual's identity can be verified using physical means by scanning his fingers, hands, eyes, or face. He can also be verified by behavioral means. His gait, vocal pitch, signature, and typing speed can be used to identify him.

Biometric technology offers the promise of an easy, secure method to make highly accurate verifications of individuals. Not only does this technology make our lives easier by eliminating the need to carry badges and other identification, but it prevents the use of forged tickets, badges, or passports. These verifications have broad applicability, and people are already being verified by biometrics in airports, office buildings, manufacturing centers, hospitals, and even amusement parks. A biometric scan can provide security access to protected areas, serve as a day pass at an attraction, punch an employee in at the start of the work day, or allow an executive access to his laptop computer.

Take a moment to learn about biometric technology, and whether biometric time clocks are the right fit for your organization's employee verification needs.

How Biometric Technologies Work

Biometric technologies capitalize upon unique, permanent, and scannable human characteristics. A unique characteristic is one that no other person shares. This characteristic should also remain the same over time, and be reliably collectable using a sensor. As much as possible, biometric technologies focus upon these types of human traits.

All biometric devices take a number of measurements from an individual then digitally process the result of these measurements and save this representation of the individual's traits into a template. Templates are then stored in a database associated with the device or in a smartcard given to the individual. This is called *enrollment*.

When the individual attempts to identify himself by scanning a finger, hand, or eye, a biometric device compares the new scan to all available templates (in a process known as *Identification*) in order to find a match, or compares the new scan to a known template for the individual (in a process known as *Verification*). To be verified, a person must first claim an identity using a login name, smart card, or token. As the individual continues to use the technology, the template continually is refined, perfected, and adjusted for slight changes in the person's characteristics.

Different biometric technologies measure diverse aspects of the human anatomy. Finger readers measure the space between the forks of the ridges in a fingerprint. Hand readers can measure the orientation of veins in the hand, or the shape, length, and width of the fingers. Eye readers measure the veins in the retina or the texture of the iris. Some biometric measurements can be taken in even more innovative ways. For example, the shape, acceleration, and speed of a person's signature can be used for biometric identification.

Return on Investment in Biometric Time Clock Installations

Biometric time clocks, which are used to record employee start and end times, are popular in organizations where security is an issue, or where employees may falsely record their time worked. Because biometric technology is more expensive than other forms of time clock identification, such as magnetic badges or personal identification numbers, it is important to evaluate the potential return on investment should biometric devices be installed. In service environments where employees punch in and out to work, return on investment can be considerable because biometric devices virtually eliminate the ability of employees to "buddy punch."

In buddy punching, an employee either types a tardy employee's PIN or swipes the tardy employee's badge earlier than he arrives to work or after he leaves work. The organizational costs of this kind of time theft can be enormous. The company loses money a few minutes at a time compounded across departments and locations. Biometrics makes it almost impossible for employees to defraud a time and attendance system.

Other returns on investment can be gained through the use of the biometric system as a security access monitor, as well. In this case, the biometric system is used to grant or deny access to restricted areas. The cost of purchasing and maintaining magnetic or proximity identification cards, which do not prevent fraudulent access, can be eliminated.

Is Biometric Attendance Verification Right for your Organization?

Several factors can help you determine whether to invest in biometric time recorders. First determine whether there is a need for biometric technology in the workplace. Then consider the potential return on investment. Finally, make sure that the work environment is physically suitable for biometric devices, and that employees can accept and use the technology.

1) Evaluate the need for authentication or identification. As mentioned earlier, a workplace with employee time fraud problems, like buddy punching, can benefit greatly from the use of biometric time recorders. A need to control security access to portions of a building can be answered with biometrics, as well. Alternately, a workplace with no security concerns or hourly workers may not need biometrics to maintain accurate employee time and attendance records.

2) Consider the cost/benefit ratio. If there is a need for biometrics, consider the cost. For a smaller organization, the cost of biometric equipment may be greater than any gains from the elimination of time theft. However, the price for biometric technology is dropping as technological advances are made and adoption

becomes more widespread. Economies of scale and sophisticated engineering continue to lower the cost of biometric devices. Lower cost biometric time clocks have begun to enter the market, and may be an option for many organizations. Your time and attendance provider can help you weigh the benefits of installing biometric time clocks.

3) Assess the compatibility of the biometric technology with the work environment. It is essential that biometric readings be as accurate as possible. For this reason, the environment in which biometric sensors are used is crucial to ensure good reads of employee biometric characteristics. An environment that is too humid or dirty can obscure the fingerprint on a finger reader platen (or reading surface), making it more difficult to correctly scan the finger. A noisy environment can disrupt the proper collection of voice data.

   Persons being scanned with the biometric device can also impact the suitability of that device. For example, a retinal scan requires that a person gaze into an eyepiece. Without cooperation, this type of scan could be difficult. Individuals with worn finger whorls and ridges, due to years of welding or other occupations, may not be able to successfully use a finger reader.

   In any environment, a small percentage of the population cannot use the biometric system, for example, 3% of people cannot use finger readers, so it is imperative that the device has an alternate method for interaction. For time recorders, this method usually involves the entry of a PIN and pass code instead of the biometric scanner.

4) Be sensitive to the concerns of employees. When considering the purchase of biometric time recorders it is important to address the privacy concerns of employees. For example, explain to employees that a finger or hand reader does not store or recognize employee fingerprints—it uses hand or finger measurements to create a template for the employee. These measurements are used only for in-company authentication and security access. They cannot be used to recreate biometric data such as a person's actual fingerprint.

Furthermore, you can emphasize that employee privacy is enhanced with biometric time clocks. When an employee accesses his benefit time balances using a biometric time clock, no other employee is privy to these records, increasing the security of his personal information.

Employees may also be concerned about the potential health impact of using the same finger or hand sensor that many other employees use. To answer these concerns, assure employees that the sensor is no more used than a door knob or ATM. Furthermore, antibacterial materials are now being embedded in some time clocks. One example of a time clock that uses antibacterial materials is the Schlage HandPunch, available through Attendance on Demand and InfoTronics, Inc.

What Does the Future Hold for Biometrics in Time and Attendance?

Improvements are in sight for the feasibility, consumer acceptance, and price of biometric identification. The possibilities of biometrics for employee authentication are endless. Experts attest that biometric technology is likely to be used in "almost every transaction needing authentication of personal identity." Biometrics are in all our futures, and they stand to improve the ease-of-use of time and attendance systems, while bolstering corporate security and enhancing employee privacy.

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