

How to use **Biometrics** in your Time and Attendance Systems

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Integration and use of the biometric technology has become simpler, and many corporations are venturing down the biometric road to secure their buildings and to verify the time and attendance of their employees. Biometrics has moved out of the realm of science fiction and into mainstream Canadian corporations. Trade journals and newspapers have been saturated with biometric news. Following the events of September 11, the public has developed a heightened awareness of biometric security, and there is a heightened demand for security in all areas of society. Costs for biometric technology are coming down, and usage is going up.

What is Biometrics?

Biometrics is the automated measuring of one or more unique physical characteristics of a person, with the goal of distinguishing that person from all others. Examples include scanners that read eyes, fingerprints, hand geometries, palm prints, voices, and can perform face recognition. This technology goes a crucial step beyond traditional swipe cards, pin numbers or passwords by ensuring that the person trying to access the premises or punch in for work is indeed the person they are claiming to be. The ideal biometric will automatically "prove" the identity of a person and ensure that no one else can successfully impersonate them.

Why use Biometrics?

Today, there are many applications for biometrics: time and attendance, access control, and PC access-basically, anywhere there is a need to "know" who the person is. Many companies suspect that

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they suffer from a "buddy punching" problem, and realize that the preparation and cost to purchase paper time cards is expensive. Cardless biometrics eliminates these costs. Even those companies who have automated by changing to a swipe card system find that employees forget their cards, and administrative time is lost enabling the employee to access a building or clock in for work. A cardless workplace helps decrease the HR/Administration costs incurred by an organization, helping to prevent costs caused by fraud and human error.

Who's Using Biometrics?

Corporations are just beginning to adapt to biometric technology in relation to time and attendance. Those corporations using the technology do so for the following reasons:

- High level of security needed to access the premises or to access areas within the building.
- Employee time fraud through "buddy-punching."
- Reduction of cost for paper time cards or plastic badges.

How does Biometrics Technology Work?

Ninety-nine per cent of the biometric time and attendance installations in North America employ either hand geometry or fingerprint technology. The technology of the two devices is easy to understand, and this helps employees to adapt more easily.

- Fingerprint Scan: The finger is placed against a sensor plate and scanned to capture an image of the fingerprint. Characteristics such as

loops, arches and whorls are compared to a previous "enrolled" sample assigned to the employee.

- Hand Geometry: This approach uses the geometric shape of the hand to authenticate a user's identity. The user enters an ID number on a keypad and places one hand on the flat surface of the device. The camera device captures an image of the hand and the biometric software analyzes the external contour, length and size of the fingers, palm, and blood vessel patterns in the hand. This image is then compared with the previous recorded sample.

Acceptance of Hand Geometry vs. Fingerprint Scanner

Most biometrics technologies allow the administrator to set the threshold of sensitivity. One would think that fingerprints, face and voice remain constant from day to day, but small fluctuations (cold or dry hands for fingerprint scanners, different lighting for facial recognition, or jewelry for hand geometry recognition) all play a factor in the biometric device's acceptance of users. A higher sensitivity threshold delivers an extremely secure environment but means that an authorized employee may be erroneously rejected. In some instances, a pilot test is recommended to see if the chosen biometrics will suit the environment, and to develop a level of sensitivity that meets security needs but does not impede authorized personnel in their use of the device.

Dino Kapakos, Biometric Product Specialist at ITR, suggests that different technologies suit different cultures and

environments. "The Hand Punch is robust technology and is less sensitive to a person's hand temperature and moisture level than the fingerprint scanner, although the Hand Punch has a more institutionalized appearance and sometimes can intimidate the users," comments Mr. Kapakos. He adds, "The fingerprint terminal is more inviting and fits an office décor better, however, it does require good temperate frictional skin and sometimes carries the stigma of being invasive because it is reading an employee fingerprint." As long as corporations have realistic expectations of the device, and have researched which best fits their environment, implementation should be successful.



Biometric Hurdles and Obstacles- Religion, Unions, and more...

The introduction of any new technology into the workplace always receives some resistance, and biometrics is no different. Before implementing, companies should explore thoroughly what they believe will be the positive and negative effects of installing such technology. David Cloutier, Chief Technical Officer at ITR suggests that it often helps to hold meetings with departments to introduce the technology and alleviate any fears. He proposes that companies "explain why the biometric is being introduced and how it will benefit both the company and the employee."

Often providers of these devices will assist companies in educating their employees. Corporations receive this assistance with open arms-in many cases the introduction of a biometric device by an outside third party receives less resistance than when it is presented by top management. In addition, well-educated suppliers are comfortable with the technology and are able to answer employee questions and alleviate fears. Those fears might include: religion-based resistance to interfacing with technology, or union concerns about management's

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control of the device. Surprisingly, even hygiene might come up as an obstacle. Some corporations have been known to install Handi-wipe dispensers beside the Hand Punch so that employees may wipe their hand before or after using the device. Senior management must also be sensitive to explaining the buddy-punching concept. While some managers will acknowledge that they have a buddy-punching problem, others strongly believe that their employees are loyal and trustworthy. To date, there is no quantifiable data concerning the exact reduction of time fraud costs, but the technology clearly will help to prevent people from attempting this sort of fraud.

Growth in the Biometric Industry

Depending on who you ask, industry experts estimate the biometric industry to be growing at a rate of 25-40 per cent annually. Martin Huddart, General Manager of Recognition Systems (Hand Punch) says his company's sales are up this year compared to 2000. Analysts predict that the market will reach \$900 million in sales by 2006. Tracy Parzych, CEO of ITR, states that they have found a dramatic shift in demand from the traditional data collector to the biometric device. She explains, "US companies had an earlier rate of acceptance of the technology. Two years ago biometrics for time and attendance was hot in the US, yet our Canadian customers were not asking for biometrics. This year 65 per cent of the hardware we are installing is either Hand Geometry technology or Fingerprint scan. We have been surprised by this sudden shift."

What's ahead?

Biometric technology has entered all facets of our lives. Recognitions Systems Hand Punch terminal is being used for passport control and security around the world in international airports. ATM machines will soon have retina or fingerprint scan for positive identification. As the technology becomes more and more mainstream, employees will adapt more and more quickly. Eventually employees will not think twice about adopting the technology. ITR has seen a vast array of biometric installations of time and attendance, from tracking members of a

Health Club, recording absences in a public school, calculating lesson time at a ski resort, and recently, reducing time fraud in a small lighting company of 50 employees. "Given that labour is the number one expense for most firms, we're going to see a lot of smaller companies by-passing the traditional punch clock and going right to biometric clocks," predicts Ms. Parzych. A cardless biometric time clock system eliminates the overhead expense of processing time cards and dealing with lost or damaged cards. Moreover, it nullifies chronic buddy-punching headaches. Companies are becoming very serious about their planning in relation to HR/time and attendance and biometric devices have become an integral part of this process.

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