

White Paper

Biometrics: High-value Workforce Management

The critical role of biometric time and attendance to workforce management solutions

February 2008

Abstract

One of the critical success factors for any workforce management solution is the ability to address time theft. Industry estimates place intentional and error-driven time theft in the range of 1.5% to 10% of gross payroll, costing U.S. businesses hundreds of billions of dollars each year. Biometric-based time and attendance solutions virtually eliminate the most significant source of time theft known as *buddy-punching*, the practice of one worker "clocking" in or out for another. Biometrics offers the only effective means of addressing the buddy-punching dilemma by directly linking an individual worker to a personal labor record. This proven technology has been used in time clocks for more than a decade by thousands of organizations and millions of employees worldwide and the results are in -- biometrics consistently deliver accurate, reliable, and auditable real-time labor data -- the foundation of effective labor management. Companies of all sizes are increasingly implementing automated workforce management systems that incorporate biometric time clocks and seeing a significant reduction in direct and indirect labor costs.

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Introduction

In today's highly competitive business environment, labor is both a principal asset and a significant cost for enterprises large and small. Automated workforce management (WFM) provides a means to effectively leverage this vital asset while keeping organizational costs under control. The result: improved bottom line performance through the optimization and reduction of direct and indirect labor costs. One of the critical success factors for any WFM solution is the ability to address a key bottom line performance challenge – time theft. Industry estimates place intentional and error-driven time theft in the range of 1.5% to 10% of gross payroll, costing U.S. businesses hundreds of billions of dollars every year.¹

"The cost of buddy-punching average(s) 2.2% of gross payroll"

Nucleus Research, 2005

"The Boston Globe and Denver Post ... reported that "time theft" and "loafing" cost U.S. employers over \$400 billion per year in lost productivity"

*The Kentucky CPA Journal
Fall 2007*

Biometric-based time and attendance solutions virtually eliminate the most significant source of time theft known as *buddy-punching*, the practice of one worker "clocking" in or out for another. Biometrics offers the only effective means of addressing the buddy-punching dilemma by directly linking an individual to a personal labor record.

In addition, biometrics offers unique benefits beyond irrefutable labor records by eliminating the need for time clock supervision, and eliminating processes and supplies related to time card, badge, or PIN-based time and attendance systems.

This proven technology has been used in time and attendance systems for more than a decade by thousands of organizations and millions of employees worldwide and the results are in - biometrics consistently deliver accurate, reliable, and auditable real-time labor data -- the foundation of effective labor management.

Market estimates indicate nearly 400,000 thousand biometric devices have been deployed to date worldwide for time and attendance applications

*Acuity Market Intelligence
Feb 2008*

Companies of all sizes are increasingly implementing automated workforce management systems that incorporate biometric time clocks. These companies are seeing a significant reduction in direct and indirect labor costs.

Biometrics Defined

Biometrics is the science of measuring physical and behavioral characteristics that uniquely identify individuals. These characteristics – finger, iris, facial, or vascular images, hand geometry, voice or signature dynamics – are captured by specialized devices and converted via sophisticated algorithms into mathematical representations or templates. Templates are used as references against which an individual's identity is verified.

Biometric time clocks have traditionally used hand geometry or a finger image to verify a worker's identity and capture labor data. More recently, facial recognition, vascular patterns (in hands and fingers), and voice recognition have also been used. Regardless of the type of biometric captured, the critical success factors for a biometric time and attendance device include speed of verification (one second or less), accuracy, ease of enrollment and use, and high throughput.

¹Sources:

- Nucleus Research 2006: 74% of organizations experience payroll losses directly related to buddy-punching, Payroll inflation from buddy punching is 2.2% of total payroll.
- American Payroll Association 2004: Buddy-punching accounts for up to 5% of the gross payroll.
- The Kentucky CPA Journal / Fall 2007, Biting the hand that feeds: the employee theft epidemic, Terrence Daryl Shulman, JD, LMSW, ACSW, CAC, CPC: The Boston Globe and Denver Post recently reported that "time theft" and "loafing" cost U.S. employers over \$400 billion per year in lost productivity.

High-value Biometrics Overcomes Legacy Perceptions

Biometrics has been used effectively for more than a decade for time and attendance and more recently for a range of other high and low security applications. Despite widespread use, confusion and misconceptions about the technology and its capabilities persist. These concerns are easily dispelled when the facts about biometrics are established.

- Biometrics offers unparalleled ability to quickly and accurately capture real-time, labor data and provide a non-repudiated audit trail.
- The use of biometrics is widespread and growing rapidly.
- Biometrics has undergone intense scrutiny and the results are in - when properly deployed, biometrics work well and are safe, secure, and accurate.
- Biometrics offers organizations a broader range of direct and indirect time, cost, and operational benefits than alternative time and attendance methods.

Biometrics offers unparalleled ability to quickly and accurately capture real-time labor data and provide a non-repudiated audit trail

Labor data accuracy is achieved through simultaneous confirmation of time and identity. Biometrics offers the only available method to achieve this level of data integrity, *unequivocally* linking an individual to his or her work record. This provides a sound, reliable foundation for effective WFM. Time card, badge, and PIN-based systems verify time only -- not the identity of the individual employee entering the labor data. Biometrics eliminates more intentional and unintentional

“Reduction in payroll error rate results in 1.2% savings of total payroll”

- Nucleus Research, 2005

“Our employees spend more time working because they spend less time worrying about the calculation of their hours and the accuracy of their paychecks.”

Edgardo Garcia, Jr., VP HR/Finance
Christian Elderly Home, Inc.

human error than time clock alternatives that cannot verify identity.

Biometrics also improves employee morale and satisfaction by increasing confidence in the payroll function through the consistent application of confidential and impartial timekeeping. Finally, biometrics ensures regulatory compliance and avoidance of legal actions and fees by providing a non-repudiated audit trail for all labor data.

The use of biometrics is widespread and growing rapidly

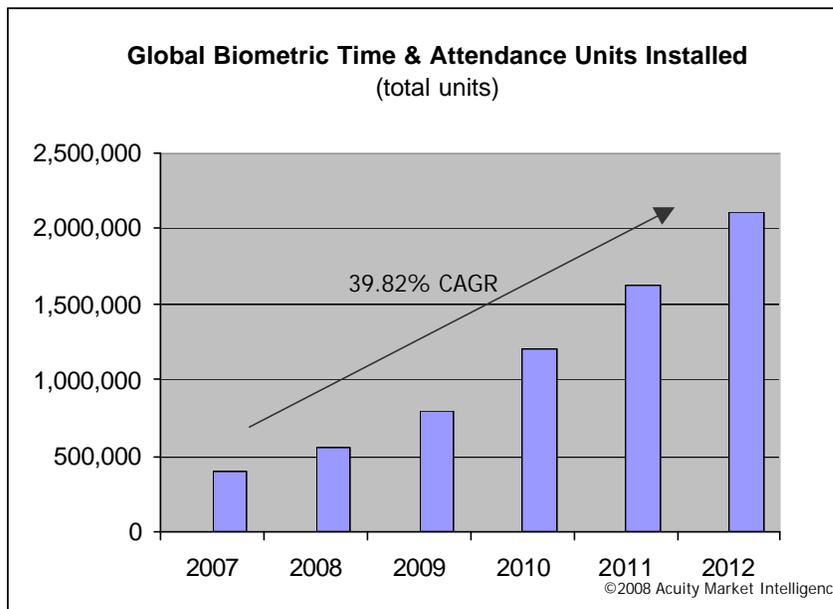
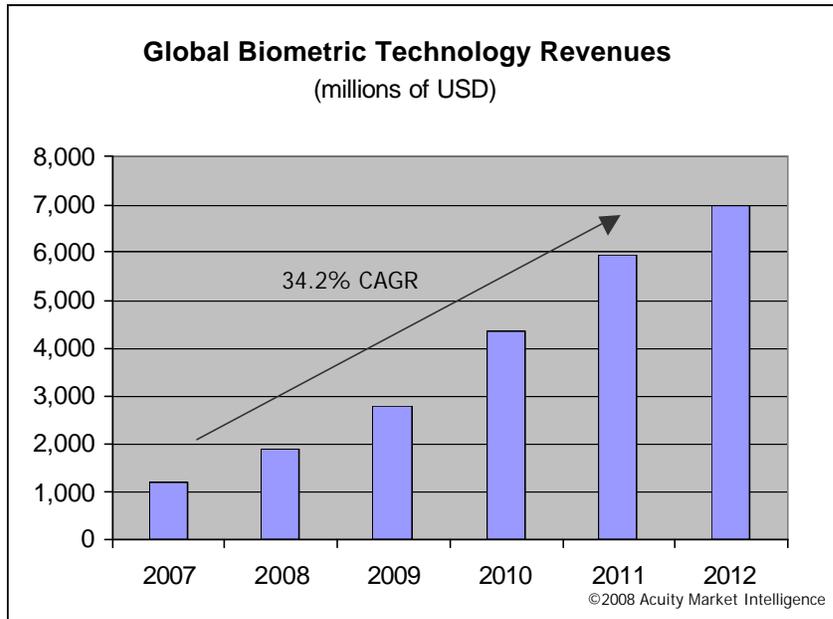
Biometrics is not a futuristic, high-risk business proposition, but proven real-world technology that helps enterprises, large and small, control labor costs and better address the competitive challenges of twenty first century business operations. Biometrics are a billion dollar business with a projected 34.2% Compound Annual Growth Rate (CAGR) over the next five years².

Tens of millions of biometric devices have been successfully deployed worldwide in government, healthcare, financial services, manufacturing, retail, and other critical environments with large hourly

² Acuity Market intelligence Market Projections, 2008

workforces. Applications range from time and attendance to border security, federal employee IDs to ATM and mobile phone access, home door locks and garage door openers to network logons and nuclear power plant access.

Market estimates indicate nearly 400,000 thousand biometric devices have been deployed to date worldwide for time and attendance applications. Projected CAGR for these devices over the next five years is almost 40%.³



³ Acuity Market intelligence Market Projections, 2008

Biometrics have undergone intense scrutiny and the results are in - when properly deployed, biometrics work well and are safe, secure, and accurate

Myths and misconceptions about biometrics persist, though most have been conclusively refuted. Three of the most frequent concerns revolve around technology performance, cost, and user acceptance.

Performance: Accuracy, Reliability, and Usability

Biometrics has been effectively used in time and attendance applications for more than a decade. Much of the biometric "performance" debate centers on the use of specialized technologies - such as iris recognition - for very large-scale, high security, identification applications such as border control, voter registration, or national ID programs. Hand geometry and finger scan biometrics have a proven track record of performing accurately and reliably with very high levels of user acceptance and customer satisfaction within the WFM environment.

Cost

The cost of biometrics has fallen significantly over the last five years, making biometrically-enabled time and attendance a practical investment for companies of every size. Most organizations find the savings from eliminating buddy-punching alone justifies the investment in a biometric time clock. In addition, many companies choose to lease biometric time clocks, enabling them to take advantage of technology advancements as they become available.

User Acceptance

Major fears that impact employee acceptance of biometrics -- hygiene, privacy, and civil liberties -- have been authoritatively rebuked. A recent study from Purdue University⁴ found that biometric devices are less likely to transmit germs, viruses, or bacteria than door handles. In terms of privacy, biometrics is actually a privacy-enhancing technology when deployed appropriately. This is true for time and attendance applications where biometrics protects and secures personal labor data. Finally, civil liberties concerns have been grossly misrepresented. Biometric time clocks do not capture data that can be used by law enforcement agencies. These systems capture and store biometric *templates* (mathematical representations), not images. These templates are incompatible with law enforcement systems.

MYTH	REALITY
Biometrics is unreliable.	The technology has been proven effective for more than 10 years in workforce management applications.
Biometrics is not cost effective.	Biometric time clocks have proven ROI. <ul style="list-style-type: none"> o Reduction of payroll preparation time and human error. o Elimination of time card and badge expenses – materials, printing, replacements, etc. o Elimination of conflicts over hours worked and time accrual benefits. o Significant reduction in overtime payments.
Workforce is resistant to biometrics.	Acceptance is very high with proper implementation including consideration of deployment environment, user education, and training.
Biometrics is not safe and/or hygienic.	Biometric technology has been proven completely safe and no more likely to transmit germs than contact with a door handle.
Biometrics can be used by law enforcement to identify individuals.	Biometric workforce management applications store a biometric template or mathematical representation of an individual's biometric. These templates are incompatible with law enforcement systems.
Biometrics exposes personal information.	Biometrics protects personal information by eliminating time cards - which can be read by others - and privately identifying each individual when they arrive and leave work premises.

⁴ *Bacterial Survivability and Transferability on Biometric Devices*, Blomeke, C.R., Elliott, S.J., Walter, T.M., Purdue University's Biometric Standards, Performance and Assurance Laboratory, October 2007

Biometrics offers organizations a broader range of direct and indirect time, cost, and operational benefits than alternative time and attendance methods

Biometrics provides bottom line benefits through the reduction of labor costs and operational expenses, as well as providing a number of key indirect benefits.

Biometric time clocks significantly reduce labor costs.

- Labor costs associated with buddy-punching -- the practice of one employee "clocking" in or out for another -- are virtually eliminated with biometrics.
- Biometrics eliminates the need for time clock supervision and managerial review and approval of timecards.
- Biometric time clocks increase accuracy and consistency in the application of pay rules and absence management tracking. When combined with real-time access to labor reports, this enables advanced scheduling capabilities that reduce avoidable overtime.
- Payroll-processing time is reduced through the elimination of human error and timesheet paperwork preparation.

"Our overtime expenses plummeted as soon as the (biometric) time clocks were installed... We are saving a person week a month in the Payroll department ... I can't imagine going back"

*John Burger, CFO
Opengate Residential Community*

"Reduction in payroll inflation (fraud and errors: buddy-punching, extra sick/leave days...) results in 0.72% savings of total payroll"

Nucleus Research, 2005

"The biometric (time) clock eliminates the need to buy time cards, it has significantly reduced our edits per check, and with a widely diverse employee population, it overcomes any language barriers."

*Dennis January, CFO
Hilltop Steak House*

Biometric time clocks can directly impact operational expenses.

- Reduction of payroll errors and payroll preparation time allows staff to focus on higher-value projects while virtually eliminating payroll and benefit accrual inquiries.
- Additional savings are achieved through the elimination of supplies and processes associated with manual timecards - paper, printing, shipping, record storage and retrieval or badge card issuance and replacement costs.

Biometrics is a strategic investment that offers a number of significant indirect benefits.

- Business risk is reduced by providing non-repudiated audit trails to verify compliance with government, union, and company policies and regulations.
- The employee experience is enhanced by ensuring accurate and fair application of labor and payroll practices and policies.
- Biometric time clocks can be linked to access control systems, providing a foundation for more comprehensive and integrated enterprise security.
- Mobile workforce management integrity can be enhanced by integrating biometrics into devices that capture time and labor data for mobile employees.

"From a time saving perspective, by putting in the (biometric) system, we've saved as much as 14-16 hours per week in supervisory time just to check on 'missing time.'"

*Eileen Reiter, HR Manager
American Mailers*

Conclusion

Proven results, strong market growth, and demonstrable bottom line performance continue to drive mainstream adoption of biometric-based WFM solutions.

- Biometric time clocks provide accurate, reliable, and auditable real-time labor data.
- Biometric time clocks are the only effective means of directly linking an individual worker to their labor data while providing an irrefutable labor record.
- Biometric time clocks increase the integrity and security of labor records while reducing administrative costs of reviewing and updating payroll information.

No longer relegated to risky emerging technology or dismissed as high-tech gimmickry, biometrically-enabled time and attendance functionality is essential to achieving maximum WFM effectiveness through the optimization and reduction of direct and indirect labor costs.

Key Takeaways

- Biometrics is rapidly becoming mainstream technology that is routinely integrated into workforce management solutions.
- Biometrics is not only a viable method of controlling labor costs - with direct bottom line impact - but the best available method of capturing accurate, reliable, and secure labor data.
- Biometric time clock users consistently report significant reductions in overtime and payroll expense.

Biometrics is a high-value proposition for effective workforce management

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Acuity Market Intelligence (www.acuity-mi.com) is an emerging technology strategy and research consultancy with a proven record of accurately anticipating biometric and associated identification solutions market trends. The company provides strategic planning, market research and analysis, sector tracking, opportunity sizing, solution and deployment analysis, due diligence, executive briefings, and customized consulting. Acuity publishes the industry leading biometrics market analysis newsletter, the *Biometrics Market Intelligence eUpdate*. Qualified readers can subscribe at www.biometricsmi.com. Founded in October 2001, Acuity is headquartered in Louisville, Colorado, USA with clients in the United States, Asia and Europe. For more information call +1 303 449 1897 or email info@acuity-mi.com.

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ADP's time and labor management solution includes biometric time clocks and enables you to increase the speed and accuracy of payroll preparation, improve wage and hour compliance, and optimize your labor investment.

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