

## **Emerging Technologies and the Internet Enable Today's E-Workforce**

By Edward M. Rizzo and Leslie A. Worsley

Today's workforce is changing, and management requires a new way of thinking. The tools driving organizational effectiveness have changed drastically in recent years in order to meet the needs of an ever-evolving workforce. Professional employees represent a greater percentage of the workplace, employees are more mobile, and there is a growing dependence on temporary or contract employees to ensure adequate staffing levels. A company's staff has become their most valued organizational resource, and employee productivity is a direct result of a comprehensive and efficient workforce management solution. In this dynamic environment, workforce management has become a new organizational imperative and it requires a new set of tools to enable efficient operation and to drive enhanced productivity. Several technologies have emerged which help organizations face these challenges.

### **The Internet**

"The Internet has changed everything" is a bit of an overstatement. Contrary to the hopes of dot-coms, traditional business has prevailed, but the Internet has nevertheless transformed some of the fundamentals of the workforce management marketplace. In the past, the benefits of a comprehensive workforce management solution, including data collection devices, application software, and the requisite interfaces, could be realized only through a relatively complex installation process that required cross-organizational resources.

#### *Enter Application Service Providing*

Today, the Internet can deliver workforce management solutions directly to the corporate desktop via a Web browser. This new approach has many names—outsourcing, netsourcing, application hosting, application service providing (ASP)—but they all mean the same thing: flexibility. The ASP platform extends the convenience of an Internet-based solution even further, by removing the need for in-house servers and implementation concerns from the client site. Instead, solution providers "host" the solution at a remote data facility, and users login to the system via a Web browser. In addition, the ASP platform has changed providers' pricing models. Instead of needing to make a large up-front capital investment, organizations can now pay a simple monthly fee, usually on a per-employee basis, and receive all the benefits of a comprehensive solution. The ASP model represents a new way of thinking about information technology and has received increasing acceptance by organizations of all sizes. The IDC has estimated that the market for the delivery of high-end applications via the outsourced model will reach approximately \$2 billion within the next four years, up from about \$150 million in 1999. While this approach may not be right for every organization, it deserves serious investigation when organizations contemplate a workforce management solution.

### **Data Collection Terminals**

The problem is still the same, "I need to know when my employees are working and what they are working on." This information is critical to achieving operational excellence and improving employee productivity. In the past, "time clocks" seemed to be the only viable solution. Fortunately technology has changed this as well. Newer technologies, including Internet-ready touch-screen kiosks and mobile devices, are creating new options in data collection, addressing a variety of new challenges in the workplace.

#### *Touch-screen Kiosks*

New java-enabled, touch-screen kiosks go beyond the capabilities of a traditional time clock in that they are true information appliances. They provide a bridge between the organization and the workforce, both capturing workforce information and extending organizational information back to the employee. A kiosk-based solution for time, attendance, and labor tracking also offers organizations a tool for empowering employees with self-service. With the touch of a finger, employees can view Internet-enabled applications that display their schedules, vacation balances, corporate messages or allow time and labor data entry. Workforce management can now be a two-way street.

#### *Mobile Computing Devices*

The increasingly mobile workforce presents a unique challenge in instituting management solutions. In the past, the only option was to use a paper-based solution—delaying vital corporate information and causing costly errors. Today, the introduction of mobile and wireless data collection devices such as cell phones and PDA's are drastically changing the nature of data collection. Personal Digital Assistants (PDAs), operating on both Palm OS® and Windows CE® platforms, are widely accepted as tools for contact and task management. However, workplaces are beginning to recognize that these devices have capabilities that extend much further. Dataquest Inc., a unit of Gartner Group, Inc., projects that by 2003 sales of handheld computers will top \$7.2 billion, growing from \$1.6 billion in 1998 (see Figure 1 on page 24). Mobile computing technology is in growing demand as today's workforce becomes increasingly mobile and geographically dispersed. Without ever visiting their office or the shop floor, employees can enter time and labor information remotely.

A device that fits in your pocket allows for maximum utilization. For the first time, organizations can implement time and labor tracking solutions that collect data at the "point of activity," allowing for a whole new level of accuracy.

Another reason for the increasing popularity of pervasive computing in the workforce is undoubtedly its usability. Operating on the Palm OS® and Windows CE® platforms, users find that the devices offer the same intuitive and familiar screens they enjoy on their desktop PCs. The

Internet-ready platform allows users to keep their most critical information in their pocket, maximizing the convenience of entering time and labor data.

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### *Biometric Technology*

Biometric technology, once the exclusive province of ultra-secret, high-tech government facilities and science fiction movies, is increasingly one of the most pervasive and popular technologies used for efficient and accurate data collection. The Yankee Group estimated in 1999 that law enforcement agencies, corporations and computer firms spent more than \$500 million on biometric devices in 1996. Sales, according to the Yankee Group, can be expected to increase more than 40% a year (see Figure 2 on page 42). While the technology has been on the market for decades, it is becoming increasingly popular in workplaces as a means for time entry and access control. Biometrics has been in use within many different industries including hospitals, manufacturing, pharmaceuticals, and union offices.

One myth that often deters organizations from instituting biometric technology is the association with fingerprint reading, criminality, or the FBI. However, biometric technology is available in less intrusive forms including voice recognition, iris scan, and hand geometry readers. For example, Time Link's HandPunch Readers read the size and shape of employees' hands using light, without reading their actual fingerprints. Once employees understand the technology, they gain reassurance that the device is not threatening.

Many organizations turn to biometrics in the face of timekeeping errors, time theft, and other white-collar crimes. These solutions verify the identity of an individual based on unique features rather than steal-able and lose-able items like badges, passwords, or keys. For this reason, biometric solutions provide a greater level of security and precision. Robin Malik-Swisher, Payroll Manager of Deluxe Corporation, stated, "One of our main goals in selecting an automated data collection solution was to reduce payroll inaccuracies, while in turn speeding up the payroll process. Utilizing biometric technology, our data collection solution has proven reliable and accurate."

With the emergence of the Internet and other technologies including mobile computing, Internet-enabled touch-screen kiosks, and biometrics, the world of workforce management has a fresh new face. IDC states that the workforce management market is expected to reach over \$4 billion by 2003. As one of the fastest growing segments within the business applications market, the growth of this market depends largely on the emergence of technologies to enhance the ever-growing efficiency, flexibility, and value of these solutions.

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