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WeSync White Paper

ENTERPRISE MOBILITY AND THE NEXT GENERATION OF SYNCHRONIZATION

Introduction

The mobile computing market is undergoing explosive growth. Globalization and competitiveness are driving an increased need for corporate travel, multi-site corporations, and the need to locate sites flexibly to attract and retain employees. These trends have led to demand for technologies that can provide mobile professionals with faster, cheaper, more convenient and more interactive mobile access to information.

This paper will discuss the new era of enterprise mobility, the role of synchronization as the key enabling technology driving mobile device use, mobile professional and enterprise synchronization needs that require wireline and wireless group solutions, and WeSync's approach to group synchronization.

Mobile Device Usage

The demand for solutions that provide mobile access to information is reflected in the rapid growth in the use of mobile devices. Dataquest estimates that there were approximately 217 million wireless service subscribers worldwide at the end of 1998 and that this number will grow to approximately 828 million by the end of 2003, of which 102 million will be wireless data users.

Innovations in mobile device design and the creation of wireless standards have driven the development of handhelds, Internet-enabled phones and two-way pagers. IDC estimates that the worldwide shipments of such smart handheld devices will grow from approximately 8.9 million units in 1999 to approximately 35.5 million units in 2003.

The rapid adoption of mobile devices is most clearly seen in the professional world. In the U.S. alone IDC forecasts that the remote and mobile workforce will grow to 47.1 million, or approximately 37% of the total U.S. workforce population, by the end of 2003.

The Yankee Group estimates that there are 37 million core mobile professionals in the U.S. today—executives, sales professionals and field service personnel—and a further 23 million mobile-equipped businesspeople such as home office users, telecommuters and others who need additional connections to work.

Mobile Solutions For Business

Businesses increasingly depend upon data networks, particularly the Internet, for internal communication as well as for getting content and making transactions with companies' Web sites, remote locations, telecommuting employees, business affiliates, suppliers and customers. Consumers increasingly use the Internet not only for personal communication and information access and publishing, but also for purchasing products and services.

Access to data networks is still typically accomplished using a desktop personal computer, or a laptop with a remote connection. However, the emergence of technologies enabling wireless access to the Internet and enterprise data, combined with the rapid rise of mobile devices, has created a shift to an era of enterprise mobility, in which individuals increasingly need to share and manage their personal information as well as access corporate data and applications. Many businesses are aggressively extending applications, content and services to their mobile employees and customers using handheld devices with both wireline and wireless connectivity.

The Need For Synchronization

As users increasingly move between a growing diversity of devices and systems running a wide variety of applications and sharing different types of information, the ability to sync data among many sources becomes the key enabling technology for the era of mobile computing and enterprise mobility. Synchronization keeps multiple sources of information accurate and consistent. Each new device is a new source of information.

The “killer apps” of mobile computing – PIM (Personal Information Management; typically includes contacts, calendars, to do's and notepads) and messaging (e-mail, alerts, short messaging) – require a synchronization solution that ensures users access to current, transferable and reliable data on multiple devices.

The most common current approach to synchronization occurs between a device and a PIM, which, in some cases, is extended to include a Web-based PIM. This first-generation approach to data synchronization is characterized by the syncing of information only between an individual's desktop and his or her devices.

Mobile devices – handheld computers, data-enabled phones, pagers and laptops – need to synchronize their data not only with one particular PIM application on a local PC, but with networked applications, databases, files and groupware.

Next-Generation Sync

However, the growing ubiquity of mobile devices and the increasing reliance of companies and individuals on the Internet, intranets and extranets to share and access information require that the next generation of synchronization technology enable multiple users to sync any mobile device with any networked data.

Users increasingly move between a growing diversity of devices and systems that run a wide variety of and share different types of information. They also operate with numerous interdependencies. Managers, work teams, clients, partners, suppliers and other associates share information to accomplish tasks in both their work and personal lives. Users increasingly need and expect to be able to share their data with others as they choose, access it instantly on the device of their choice, and be assured that the shared information is up-to-date and consistent for all.

The ability to sync data among many people and devices will be critical for the next generation of sync technology if it is to succeed as the key enabling technology for mobile computing. The challenge: synchronization is an order of magnitude more difficult when more than one user shares each data object.

The WeSync Solution

WeSync believes its approach, group synchronization, offers a solution to the challenge of syncing data among multiple users on multiple devices. WeSync's sync applications are optimized for group use and enable group members to exchange current, transferable and reliable information using multiple mobile devices. They leverage both Internet and wireless connectivity and work for devices that are not always connected to the network.

This approach offers both personal and enterprise customers dramatic benefits in the form of increased productivity. By ensuring that critical business and personal data is always up-to-date, instantly accessible and consistent across multiple users and devices, WeSync allows users to streamline group scheduling, avoid wasteful resource conflicts, improve response times and integrate their lives with those of colleagues, family members and others.

GroupShare™ Architecture

The core of WeSync's approach is its GroupShare™ architecture, a scalable, extendable framework for the synchronization of data. The architecture is optimized for both connected and wireless mobile devices. The architecture supports devices that are memory and processor power-constrained and often suffer from low-bandwidth, high-cost wireless networks. The ability to add new devices and new data types is another feature of the flexible GroupShare™ architecture.

WeSync's GroupShare™ architecture features include:

- Complete, robust group synchronization (multiple users, multiple devices)
- Optimized for constrained mobile devices
- Seamless integration with existing handheld applications
 - no need to modify interfaces, change set-ups or redefine sync options
- Selective sharing
 - user defines what is shared and with whom

- Scalable; can extend by adding new devices and/or new data types
- Handles the occasionally connected user
- Multiple calendars, unlimited contact categories

In addition, WeSync recognizes that full-time wireless access can be prohibitive in terms of cost and reliability, and fully supports what it terms the “occasionally connected user.” This is the most common usage today, and one that a number of other sync solutions do not fully address.

Group Synchronization Technology

The complex nature of group sharing has shaped WeSync’s unique approach to synchronization. WeSync’s sync technology solves the traditional problems of identifying and prioritizing data that has made synchronization between groups of users involving multiple, intermittently connected devices so challenging.

Identification is the process of matching a record from one source with (possibly modified) copies of the same record stored elsewhere. Many sync solutions solve this matching problem by examining the contents of individual records. WeSync considers this approach fundamentally flawed because in a group sharing paradigm it is common for records to be changed by more than one person.

Prioritization is the action of determining which of two different versions of the same record is current. If a single person makes a change to a data item in the morning and then makes a contradicting change in the afternoon, it is reasonable to presume that the afternoon change is the correct one. This logic breaks down if the person who makes the afternoon change is a second person who has not yet seen the change made earlier. In a group-sharing scenario where multiple authors modify records simultaneously, this approach becomes increasingly problematic.

WeSync solves these very complex problems of identification and prioritization using a proprietary, patent-pending method consisting of data for identifying, data for prioritizing, and rules for manipulating that data. No existing sync solutions are as robust and capable of dealing with the extra demands placed on synchronization by group ownership of common data.

Wireless Refresh™ Technology

There are wide discrepancies in processing power, storage and connectivity across the variety of mobile devices used today and in the future; generally speaking, however, they have limited memory and CPU bandwidth.

Unlike most other sync technologies, WeSync's has been designed from the ground up for wireless, extending first-generation wireline sync solutions to the wireless environment. WeSync's powerful and efficient Wireless Refresh™ technology leverages the device's wireless capabilities to perform narrow bandwidth syncs, enabling users to keep information current without taxing the device's processing capabilities or incurring costly connection fees.

Wireless Refresh™ allows users to establish key parameters for wireless sync:

- Only changes to the database are transmitted for each sync, which means less data to transfer, resulting in a faster sync session
- Users can choose which portions of the database to sync (e.g. specific days or weeks for the sync) resulting in fewer bytes to transfer
- The protocol is highly compressed for the most efficient transfer of data, a major benefit when handling millions of customers
- Users sync data directly with the WeSync server; they only need access to the Internet, not a PC

Summary

Data synchronization, one of the most dynamic facets of handheld-related technology development, is evolving from a simple data exchange and backup between a handheld and desktop to become the enabling technology for powerful mobile enterprise applications.

As mobile professionals increasingly rely on mobile devices and solutions, and anytime, anywhere access to the Internet and intranets and/or extranets, they require synchronization applications that go beyond the limited role of personal tool to offer large-scale improvements in productivity and communications to teams, groups, and organizations.

WeSync's unique approach to synchronization solves the considerable challenges of syncing between groups of users on multiple devices. Patent-pending methods for identifying and prioritizing data are key to the WeSync solution.

Designed for coordinated wireline and wireless synchronization, the company's flexible, scalable GroupShare™ architecture offers seamless integration with the user's existing handheld applications. WeSync's Wireless Refresh™ technology is a powerful and highly efficient sync solution for users of wireless devices.

The next generation of sync technology must address the needs of groups who need to update and access shared information on multiple devices. Only WeSync offers solutions today that fully meet the need for group and wireless group synchronization.

