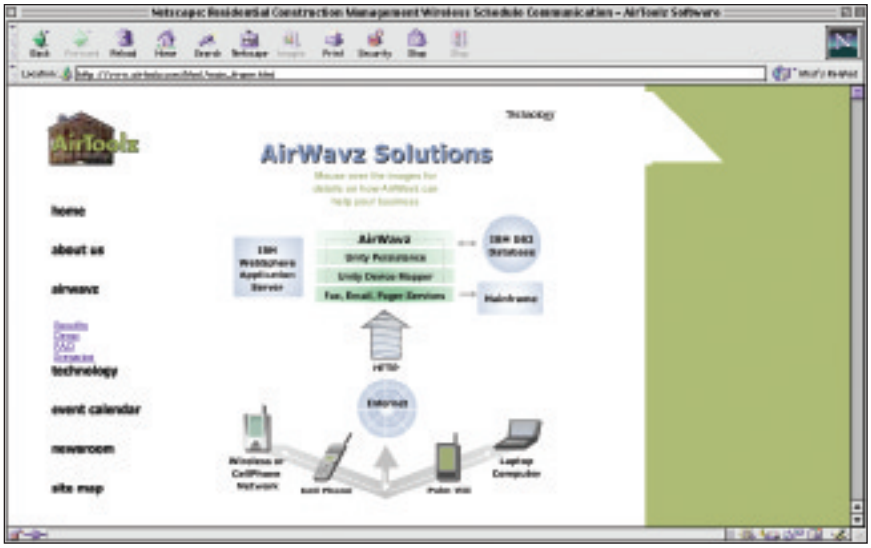
AirToolz makes waves with unique wireless construction management tool.

Overview

- ***Challenge***
  Enable general contractors to monitor changes in construction schedules and communicate them to sub-contractors quickly and efficiently
- ***Solution***
  AirWavz, a centralized construction scheduling application accessible through standard Web browsers or handheld wireless devices
- ***Why IBM?***
  Proven reliability and scalability of products; strategic architectural direction provided by IBM
- ***Key Business Benefits***
  For AirToolz: 100% ROI and 20 new customers expected within 2 years
  For customers: 80% reduction in time spent making phone calls, saving 15 hours per month; 5-6% reduction in build cycle; payment time to subcontractors reduced; reduction in costs and improved construction quality; improved customer satisfaction
- ***Business Partner***
  Unity Software Systems



IBM DB2® Everyplace™ turns AirWavz handhelds into project management powerhouses.

At a busy construction site, a superintendent clutches his cell phone to his ear, struggling to hear over the din of pounding hammers. The news is frustrating. The plumbing sub-contractor must push out his schedule due to damaged supplies. This delay will impact other sub-contractors downstream, each of whom the superintendent must call. Not all the sub-contractors will be available on first call, so he must remember to call again and revise the schedule. Then, he must update the schedule and fax it to the head office, so managers

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e® business

Key Components

Software

- IBM WebSphere® Application Server, Advanced Edition, Version 4.0
- IBM WebSphere Studio
- IBM DB2 Universal Database™ for AIX®, Sun's Solaris Operating Environment and Windows NT®
- IBM DB2 Everyplace
- IBM VisualAge® for Java™
- IBM VisualAge Micro Edition

there can review the progress of various construction sites. If only there was an easier way for him to track these changes.

Help is at hand. Using AirWavz—a unique business-to-business communication solution designed for the residential construction industry—general contractors and sub-contractors can monitor and communicate schedule changes in near realtime through handheld wireless devices or standard Web browsers. Created by Scottsdale, Arizona-based AirToolz Software—a joint venture between IBM Business Partner Unity Software Systems and Arizona-based LMC Construction (LMC)—AirWavz is powered by a full suite of IBM e-business technologies. The application was developed using IBM VisualAge for Java, IBM VisualAge Micro Edition and IBM WebSphere Studio and runs on IBM WebSphere Application Server. The central data repository is built on IBM DB2 Universal Database, with IBM DB2 Everyplace providing a local data store for mobile clients.

Easy-to-use tool yields concrete benefits

Today, even large construction companies with widespread operations rely on telephone and paper communications to manage processes such as sales, scheduling and supply chain management. Construction scheduling is particularly cumbersome—typically, superintendents make nearly 4,000 phone calls a month to manage schedules at different sites and communicate changes to sub-contractors. The more technology-savvy general contractors may maintain master schedules in spreadsheets—one for every site under construction. But with larger contractors building as many as 30,000 homes a year, that's 30,000 complex spreadsheets to track.

Says David Dean, director of marketing, Unity Software Systems, "Technology penetration in the construction industry has traditionally been slow because few solutions are user friendly and intuitive. We've designed AirWavz with simplicity in mind. IBM provided us the best-in-class e-business products and suggested the kinds of architectures that gave us the versatility and scalability we needed."

"There was never a doubt in our minds that we would build AirWavz around DB2 and WebSphere…we chose DB2 Universal Database over the other databases because we knew we could count on its reliability and scalability."

–Phil Hartley, President, Unity Software Systems

AirWavz yields immediate productivity improvements, reducing the time a superintendent spends making phone calls by nearly 80 percent and saving approximately 15 hours of labor a month. Bela Lestar, AirToolz vice president and LMC founder, notes, "AirWavz doesn't change the build process, it simply makes it highly efficient and cost-effective. This improves construction quality and customer satisfaction." At LMC, analysts report a 5 to 6 percent reduction in the time required to build a house—shaving days off an average 80-day build cycle—because changes are communicated as soon as they occur.

Expecting to gain 20 customers by the end of 2002, Phil Hartley, president, Unity Software Systems, says, "The construction industry is still highly fragmented, so that's a very satisfying pace of growth for us. We're projecting a 100 percent return on investment within 2 years."

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–Phil Hartley

Integrated solution improves customer satisfaction

AirWavz addresses the construction management challenge by creating a centralized schedule, stored in DB2 Universal Database for AIX or Sun's Solaris Operating Environment, thus eliminating paper records or multiple spreadsheets. Construction superintendents access the schedule through standard Web browsers (JavaServer Pages are created using WebSphere Studio)—or wireless handheld devices such as Research in Motion (RIM) Blackberry, Microsoft Pocket PC or Palm Pilot running DB2 Everyplace—allowing them to instantaneously update the main schedule. If a wireless connection is unavailable, AirWavz automatically initiates synchronization when one does become available. AirWavz, powered by WebSphere Application Server, automatically detects the impact of one change on other tasks and communicates changes to sub-contractors over their cell phones, or through e-mail or fax.

AirWavz is integrated at the backend with the general contractor's business systems, such as sales, financial and supply chain management applications. Customer specifications—such as type of fittings or appliances—are extracted from the sales system, integrated into DB2 and communicated to the superintendent at the appropriate time during construction. Hartley explains, "By showing superintendents only what is relevant at each stage, we reduce the probability that they will overlook something. That reduces costs and time, because they don't need to redo tasks later, and enhances customer satisfaction."

Soon, AirWavz will enable sub-contractors to consolidate their schedules with the different general contractors they work for, estimate materials requirements, place orders and assess employee productivity.

Payments to sub-contractors have become more punctual with AirWavz. Once a job is completed, AirWavz automatically communicates with the backend accounting system for invoicing. "Earlier, sub-contractors had sent representatives to each superintendent to approve invoices and then sent the papers to the head office for payment," explains Lestar. "This would take weeks in some cases, whereas now it takes several hours each day."

DB2 and WebSphere deliver versatile e-business platform

A veteran in developing mission-critical applications for industries such as banking, telecom and oil and gas, Unity Software Systems has worked with diverse software and hardware platforms. But according to Hartley, "There was never a doubt in our minds that we would build AirWavz around DB2 and WebSphere. We sometimes use Oracle and Sybase at the request of our customers. But we chose DB2 Universal Database over the other databases because we knew we could count on its reliability and scalability."

Since companies must integrate AirWavz with their existing backend systems, two important criteria in selecting the technology were support for both open standards and multiple platforms. "We used Windows NT for development but deployed AirWavz on AIX and Solaris. In our industry, AS/400® is also widely used. We can deploy AirWavz on the customers' platforms of choice," Hartley explains. "The IBM e-business suite supports open standards and multiple platforms, which is what makes it so universally applicable. WebSphere Application Server was especially attractive because it is J2EE-compliant and provides a very flexible development environment."

AirToolz is enhancing AirWavz's functionality for sub-contractors with modules for scheduling, materials and supply chain management, and employee performance tracking.

AirWavz also lends itself to business intelligence applications. Data collected and consolidated in DB2 throughout the construction process can be analyzed to assess contractor performance, identify recurrent problems and perform cost analysis. "Users can select from a range of reporting and analysis tools," says Hartley. "There is no solution in the construction industry that enables the breadth of functionality that AirWavz does."

For more information

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