Tools of the Trade

More than the **heaviest hammer**, more than the **strongest nail**, technology is the must-have tool that you can't do business without

BY PHOEBE DEY

Once upon a time, a foreman's best friend was a well-worn clipboard clamping a wad of papers that detailed every aspect of a project. The foreman carried the clipboard from site to site and if he forgot or misplaced it, well, it was game over. Times have changed for the better and construction companies are using innovative technology to increase productivity and, ultimately, their bottom line. Today, the clipboards are being replaced with portable computing devices such as Blackberrys or personal digital assistants that allow instant communication among workers and the ability to set up virtual construction trailers miles away from the home office. Global Positioning System (GPS) devices can be installed on heavy equipment to pinpoint the location and the use of machines. ▸

ILLUSTRATION BY RÉGIS LEJONC

"WE CAN PUT 1,200 DIFFERENT NAMES IN THE PALM AND SPLIT THEM UP BY PIPEFITTERS OR WHATEVER DISCIPLINE THE WORKER BELONGS TO," SAYS DAN PLOURDE OF KINETIC PROJECTS. "EVERYONE HAS INSTANT ACCESS TO THE NAMES AND WE KNOW WHO IS AVAILABLE TO WORK."

Calgary's WRD Borger Construction Ltd. has done its fair share of homework on how wireless applications and management tools can improve efficiencies in the workplace.

Most of the company's foremen carry Palm Pilots and supervisors are equipped with notebook computers, giving them the ability to track jobs better and keep precise progress notes. If a field supervisor needs to send a photo to head office, all it takes is a press of a button and within seconds the photo is e-mailed back to the office.

The family business that specializes in the installation of underground utilities also uses multimedia forms to increase productivity and accountability. "Before we install anything we do a thorough evaluation based on a cost-benefit ratio," says Bill Borger Jr., assistant manager. "We're not using technology just for the sake of technology. We're not interested in that."

Three years ago the company introduced HeavyJob electronic timesheets, a move that not only saved time, but caught errors that might have been previously missed. Now, a foreman in the field can enter payroll hours into his Palm and the hours are immediately downloaded to the accounting department back at head office. Instead of spending the first four days of every week in panic mode rounding up employees' hours, management can analyze expected and actual expenditures for individual jobs, says Borger. "We're catching extra hours now that we wouldn't have been able to notice until month's end. By that time, we've already lost a lot," he says. "It's a very simple flow of information and it cuts administration time in half."

Building trades, compared to other industries, have been historically slow to adopt new technologies. Borger was surprised that he met little resistance from his staff when he introduced new technologies into the workplace. He thought that within a year only a few employees would use the electronic timesheets, but after three months, the entire company had moved toward the paperless trend.

The company also uses other software such as The Dispatcher, a program that acts as an electronic magnetic board and maps out the location of equipment. By moving a computer mouse over a loader and dragging it from site to site, the company can ensure its resources are maximized.

Satellite technology has been around for many years, mostly used by the military, but it is now being developed for the business market. Combined with wireless communication devices, GPS allows companies to manage mobile assets such as equipment and trucks.

With satellite GPS installed in his machines, Borger can see exactly how many hours a specific piece of equipment ran during the day and its exact location, which helps to manage expenses. Borger can generate reports that help with job costing, transportation planning, theft prevention and machine utilization. "It leaves a footprint to show you exactly where it is," he says.

The construction industry is a huge market for technology developers with many companies such as WRD Borger Construction waiting for new technologies to mature. Borger has just signed on to use software that allows workers to enter data using voice-recognition technology instead of a keyboard. The user can read quantities and figures directly into a microphone connected to a personal computer.

All this new technology might sound futuristic to some, but if it didn't work, Borger insists he wouldn't use it. "We are

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constantly measuring the cost and benefit for the company," he says. The cost is apt to surpass previous systems, but so is the benefit. Firms considering buying new products should double or triple their estimated budget, Borger says. "We've definitely had some challenges along the way but all in all, these changes have paid for themselves many times. We are part of a technological revolution and as long as you are using it in the right way, it should work for you."

WITH SATELLITE GPS INSTALLED IN ITS MACHINES, WRD BORGER CONSTRUCTION CAN SEE EXACTLY HOW MANY HOURS A PIECE OF EQUIPMENT RAN DURING THE DAY AND ITS EXACT LOCATION, WHICH HELPS TO MANAGE EXPENSES.

Off-the-shelf programs might meet most business needs, but sometimes customizing applications can give a business an edge over the competition. Kinetic Projects Inc., a Calgary-based industrial contractor, built its own management system that lets the company manage its diverse activities. Cost Track computes dollar values, records change orders and logs time sheets. Daily and weekly summaries identify when projects are veering off track. "Before when someone would walk in and ask how a job was going, we would say, 'I think we're doing well,' but now we can show exactly where we are and what we still have to do. Because we're such a fast-growing company, we simply needed a system like this to keep on top of everything," says Dan Plourde, construction manager.

No matter where contractors are – in the office or in the field – they want technology that allows them to keep in touch with each other and transmit necessary documents. Wireless personal digital assistants that allow you to do everything from making phone calls to sending e-mails to browsing the Internet are slowly being adopted by most construction firms. Kinetic Projects outfitted many of its senior staff with Palms, a widely-used personal digitial assistant (PDA). Aside from being able to quickly contact home office, supervisors are using the portable, wireless devices to store manpower lists, says Plourde. "We can put 1,200 different names in the Palm and split them up by pipefitters or whatever discipline the worker belongs to. Everyone has instant access to the names and we know who is available to work."

Like others in the field, Kinetic Projects is almost completely electronic. The company has spent the last two years shredding paper punch cards and switching to a computerized payroll system. From the most remote sites, employees can submit their work hours electronically. It's never too late to adopt new technologies that improve efficiencies in the workplace, says Plourde. "Five years ago, I was told that everything in our industry was going to be done on computers and I was late getting into it. I'm still glad I signed on when I did," he says. "It's become so important that it's now a prerequisite to be computer literate if you want to be a supervisor."

Calgary-based Alberta Glass Company is also keeping current with the latest technology, especially maturing products within its field. General manager Paul Heyens says that companies should acquire new technologies slowly and not attempt to do everything all at once. The aluminum and glass contractor started off by networking and wiring its office, then the company bought PDAs for all of its project managers. The next step will be to provide PDAs for all field superintendents. To maximize

and manage the flow of information, Heyens plans to set up Wi-Fi-compatible laptops for two of its major projects this year. Wi-Fi, short for wireless fidelity, uses radio technology to allow computers to connect to each other and to the Internet without wires or plugs.

Just knowing what technology is capable of doing and how to maximize it can give a company a leg up on its competitors. Optimizing AutoCAD, a computer-aided drafting software package for two- and three-dimensional design, helps Alberta Glass employees accurately estimate the lengths of aluminum and glass needed for projects, resulting in higher yields and less material waste. Several times a year, employees attend AutoCAD classes to learn about new features and understand where the industry is heading. Something as simple as learning how to make a PDF, an electronic file that preserves the design as it appears on paper, instead of printing and faxing designs to architects and contractors can save the company time and money.

It's hard to know what product is the best fit for your company with so many software developers waving tantalizing products around. Sometimes it's not necessary to go out and buy the latest bells and whistles. Firms can maximize the tools they already have, says Donna Smith, manager of corporate communications for Clark Builders in Edmonton. The general contracting firm isn't afraid to follow the familiar adage, "If it ain't broke, don't fix it," even if what it is using isn't cutting-edge. "A lot of what we do still relies on Excel because it's solid and the program does work." However, companies should still pay attention to new products. Clark Builders recently purchased PDAs so that staff could receive up-to-the-minute updates on projects.

If there is one piece of advice everyone agrees upon it is that companies must figure out what their long-term goals are and how technology can aid them. Heyens believes that construction companies have to see the big picture. "We use technology to speed up or enhance our present way of doing business," says Heyens. "Technology is useful as an accelerator, kind of like fuel, not a vehicle."

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