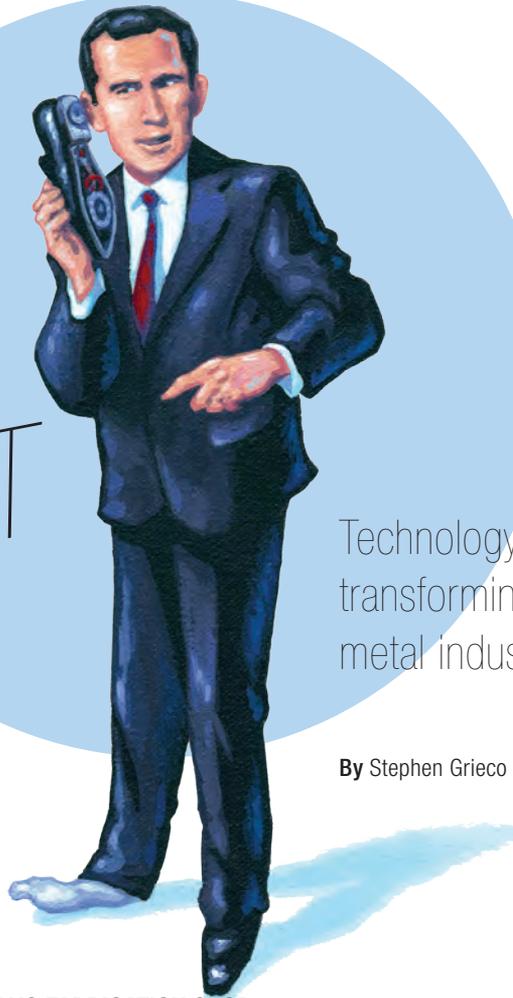


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SMART

Technology tools are transforming sheet metal industry

By Stephen Grieco

VIADUCT SHEET METAL'S FABRICATION SHOP in British Columbia, Canada, used to be a chaotic environment. Hand-drawn work orders were sent via facsimile to the shop where two tradesmen spent their day accepting and reviewing job tickets with the field crews to ensure nothing was missed.

As this British Columbia business grew, using an outdated method of ordering became taxing for both the field and shop.

Viaduct President Mark Halvorsen wanted a better, more efficient way to order, manufacture, and install ductwork products. Unable to find any commercially available solution that fit the company, Halvorsen and his team developed their own solution—Webduct—a Web-based ductwork ordering, pricing, and manufacturing system.

"We have been fully integrated and using the system for the past three years," Halvorsen says. "It has helped streamline every part of our operations from the shop floor to field installations, time card management, estimating, costing and reporting."

An increasing number of SMACNA contractors are testing and deploying a variety of tech tools—even everyday smart phones—and seeing impressive results, including significant time savings and increased productivity. Most of these smart tools are off-the-shelf technologies available from famil-

iar names like Autodesk, Trimble, and Apple, while some contractors are creating their own high-tech programs.

Either way, smart technologies are transforming old-school sheet metal and HVAC industries across the U.S. and Canada.

Smart technologies, generally speaking, are tools that offer greater control and convenience. This typically means simplifying systems, employing more automation, and using resources in a better way to make people's lives easier.

In the business world, smart technologies enable companies to offer higher quality products and services that are delivered faster and at lower cost.

For Brandon Charter, a SMART-trained sheet metal foreman for The Waldinger Corporation in Des Moines, Iowa, the benefits of smart technology came from using a common iPad. Management decided to put these computer tablets in the hands of a few field foremen and encourage them to "bubble up" some ideas for how to use the technology to improve construction workflow.

"At first I didn't know how to make the iPad a useful tool," Charter recalls, "Then I became more familiar with the options, and it started to fit into my daily routine. It has made everyday tasks a lot quicker and easier."

Some of the apps that were useful to Charter and the other foremen include e-mail; Facetime for video conferencing; and Weatherbug, which allows field crews to check weather forecasts and radar from the jobsite and plan their work accordingly.

Others include Dropbox, which uses “cloud” storage of computer documents and drawings, including very large files that would otherwise be difficult to email; Fleetmatics to track trucks in the field; and GoToMeeting to enable multiple employees, subcontractors, and clients in remote locations to look at digital drawings at the same time.

Charter found the PDF Expert app to be especially helpful. The program, which uses the iPad’s talk-to-text feature, allows him to conduct daily business more quickly and easily—transforming the old tedium of filling out form after form into a simple paperless process. Now it takes only minutes for Charter to mark up PDF documents; open prints; capture signatures and photos; complete timesheets, two-week schedules and daily logs; and submit safety reports.

“Before this technology, we faxed and did anything on a computer in our job trailers,” Charter says. “It takes a lot of time to walk out to the trailer and back to the work site. I am hopeful that those days are behind us. With the iPad, I am more productive because I have everything I need with me on the work site.”

Waldinger’s Director of Operations Technology, Stacy Zerr, says the focus of the company’s mobile device application strategy is to share more information, faster, and more easily with field staff. “The goal is to equip foreman so they can make decisions more quickly, thereby increasing field productivity and ensuring safer jobsites.”

“Using mobile devices and technology is especially useful during fast-track projects,” Zerr adds. On these projects, design changes in the field and remodels require one or two new fittings here and there. Typically, foremen don’t know what is needed until they get to the job site.

“There is no question that there have been gains,” says Guy Gast, president of Waldinger’s Iowa division. “We’ve seen a significant increase in production and layout. Our ability to do more with less is certainly enhanced with mobile tools. By harvesting technology gains we’re getting more duct up in the air.”

Using tablets in the field is a great starting point for SMACNA contractors and their SMART part-

ners who want to explore the benefits of smart technologies, says Mike Miller, senior vice president for Southland Industries in Dulles, Va.

He believes that given the inherent efficiency challenges associated with field operations, a modest investment in some hand-held devices can produce a nice return on investment.

Miller is accelerating the integration of BIM software at Southland by working with Autodesk to customize a Revit design program. “We’re enhancing the content of their material libraries, then using the concept of design build delivery to have our engineers draw our systems coordinated with real parts and pieces,” he explains.

“This technology allow us to go directly from design drawings to tool downloads in our shops to build duct and pipe using less time and saving costly labor dollars,” Miller adds.

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Like Viaduct, Waldinger and Southland are also using smart technologies to streamline job entry and manufacturing production. Waldinger uses Trimble’s Field Fitting Input (FFI) app to enable field foremen to communicate directly with the QuickPen software that operates the plasma cutter. Southland created an in-house computer program for the same purpose.

Webduct, FFI, and Southland’s program all facilitate the flow of digital project data—integrating data that already exists and seamlessly sending information around the organization.

Field foreman can send as-built information from the job site back to the office, where a detailer simply imports the data into the cutting software, creates a job, and puts it into the shop. Field personnel can also remotely request change orders.

Features for these smart technology products vary, but the more sophisticated versions enable foremen to electronically transfer design software files to layout equipment in the field. Change orders received

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No More Shoe Phones! Time for a Web Site

A few years ago, a CNN news report from Africa featured Rwandan children using computer laptops. For many of these children, an observer said, their first English word was 'Google.' Today, the world is even more immersed in technology—most of which is designed to satisfy an ever increasing demand for access to and content from the internet.

Thanks for social networking sites like Facebook, everyone from teens to grandparents now has a personal presence on the internet. Small businesses, however, are not keeping pace with current Web trends.

According to Scott Flood, a marketing consultant and writer, a recent study found that fewer than half (42 percent) of the nation's small businesses (companies with fewer than 250 employees) have a Web site.

"If that alone doesn't sound like a big deal to you," Flood writes, "consider that coverage of the study also noted that 97 percent of consumers will search for local businesses online. A business or community that doesn't have an online presence essentially doesn't exist anymore."

Even if an organization doesn't 'do business online', a Web site establishes and provides legitimacy.

Two decades ago, companies established that they were real and viable through other means. The standard glossy four-color 'corporate' brochure was one of those means; having the largest ad in your corner of the Yellow Pages was another.

People want information before they make a decision to buy a good or service. Today most consumers, including B2B prospects, get that information online.

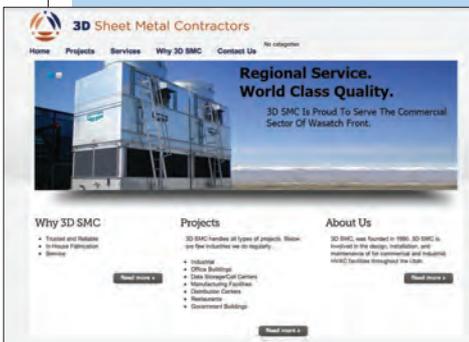
"Consider what I do when I'm choosing a restaurant for a nice family dinner," Flood explains. "I'll think of a couple restaurants I haven't visited, and then I'll try to take a look at their menus to make sure they'll have something everyone will like. If a restaur-

ant has a Web site and a menu, it's in the running. If it doesn't, I quickly lose interest."

"If your business or community doesn't have an online presence, you need to get one," Flood advises. "If you're not online today, you stand a much better chance of being out of business tomorrow."

Flood offers the following recommendations for SMACNA contractors and their SMART partners:

1. Hire a pro when creating or updating a Web site. Just as you would discourage homeowners or business owners from doing their own HVAC work, don't try to tackle the Web on your own. Otherwise, you'll end up paying a pro more to fix things.
2. Spend a couple hours looking at Web site for sheet metal/HVAC contractors in faraway cities. Bookmark sites and features that you think are effective. Go back and look at those sites a second time, and you should have plenty of ideas for improvement.
3. Don't try to dazzle people with wild graphics and technology. Be authentic. Be proud of what you do well. Case studies are an effective way to demonstrate your expertise.
4. Sites for consumers need to be less technical. Instead, make them reassuring. Think of the type of customers that make up the majority of your business and what those individuals want to know when they are considering doing business with you. Focus on those points.
5. Simple and clear are good objectives. Check all the navigation to ensure that it works. Have your pro test your site on several different browsers and with mobile devices.
6. Remember, the best companies don't always have the best Web sites, so don't assume that contractors you look up to will have great Web sites.



at the office, for example, can be sent to layout instruments in the field where personnel can pull up 3D CAD or BIM models that display all layout points.

Information in the model can then be used with laser devices to locate sleeves and hangers—essentially automating installation points.

Standardization of processes includes use of a library database of ducts and fitting that foremen select from when submitting electronic tickets to the fabrication shop. Shop-specific templates for each type of fitting further expedite the process. System-generated reports also make it easy for managers to stay on top of projects.

With these smart technologies, processing orders takes a few hours, compared to a few days with the traditional paper approach. Prior to having access to the Trimble FFI app, Waldinger's Charter used hand tickets and either faxed or drove them to the shop to place an order. It wasn't unusual to need seven to nine different fitting forms to fill out a single order.

"You know what you are getting using this app because you are the one doing input," he explains. "This has saved a lot of redundant work between jotting down fitting, filling out the hand tickets, and then having the shop input everything into the fabrication system."

Charter says inputting his order 'live' from the field and sending it directly to the shop has also increased the accuracy of orders.

Viaduct foremen are equally happy with Webduct, which has enabled the company to trim shop production times by up to 50 percent. President Halvorsen has also seen numerous side benefits. "Standardized ordering has made it easier to move manpower from project to project," he says.

Halvorsen indicates that cloud-based ordering has enabled his foreman to gain better control of production from the shop for their field installations. "The system has everything they need right at their finger tips," he says. It includes a complete set of company manuals, as well as sub-trade, supplier and customer contact information.

"The field no longer needs to have the shop verify what they order because the system does that automatically. Thus, phone calls and faxes have been eliminated," Halvorsen adds.

Viaduct had such success with their technology that they decided to offer the service to other sheet metal contractors by creating Webduct Systems Inc.



"Fax machines are obsolete in most industries. Computing and technology as we've known them are fundamentally changing," says Joe Perraton, president of Point One Media Inc. and a partner in the development of Webduct.

"They are changing for the same reason as any industry or business should change, because there is a faster, better, and cheaper way," he says. "Your customers and the next generation of sheet metal professionals will demand your participation."

"Go ahead and take the leap," advises Southland's Miller. "The payback over time may include unexpected benefits."

For Gast at Waldinger, using smart technology is an important way to ensure that he's not wasting the company's intellectual assets—his employees who expect their employer to be forward-thinking and abreast of industry developments.

"There are a lot of smart people out there at all levels of the organization," he says. "In order to get the most out of these newer technologies, we have to put them in the hands of our most experienced people—whether it's a young man or woman who grew up with technology or a more senior employee who has always been willing to learn new things. Smart and willing people get the job done." ■

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