JULY 2018 | CONSTRUCTIONBUSINESSOWNER.COM

CONSTRUCTION BUSINESS OWNER®

THE LEADING BUSINESS MAGAZINE FOR CONTRACTORS



WATCH THIS

How contractors are making the most of video & using YouTube for smarter online marketing

IN THE OFFICE
WINNING THE WAR FOR TALENT

IN THE FIELD
THE COST OF FATIGUE



Introducing a truly unique machine with endless possibilities.

The new JCB Teleskid is the first and only skid steer and compact track loader with a telescopic boom, making it the most versatile machine you've ever seen. It can lift higher, reach further and dig deeper than any other skid steer on the market and can access areas you wouldn't have thought possible, until now.

JCB TELESKID

JCB

jcb.com/teleskid

Circle 110 on card.

4973



Your Trusted Partner for Telematics

GPS Insight offers advantageous pricing and unmatched customer service. Every customer receives a dedicated account manager to ensure our partnership is successful.

Monitor light/heavy duty vehicles, heavy equipment, and non-powered assets.

GPS Insight Solves These Challenges:

- Monitoring driver behavior
- Enforcing safety policies
- Rising insurance rates
- Ensuring vehicles are safe to operate
- Too many manual processes

Tailored GPS Tracking & E-Log Solutions for Construction Fleets

877-477-2690 **GPSINSIGHT.COM**

GPS INSIGHT

Circle 107 on card or visit cbofreeinfo.com.

FROM THE EDITOR | Kathy Wells

Summer is one of the busiest seasons in the construction industry. Looser client schedules, sunnier skies and drier earth provide a swell of business and the potential for growth. While this is great for business, it's not always great for the health of your workers. Working outside in the hot summer months brings with it the risk of heat exhaustion, which sickens thousands of workers every year. OSHA's Heat Illness Prevention campaign (osha.gov/heat) alerts us to the dangers of working in the heat and tells us to gradually increase shift lengths so workers can adapt to hot environments; provide frequent water breaks; allow ample time to rest; and provide shade on the jobsite. Where I'd like to see more attention focused is on "ample time to rest," which doesn't always receive the care it should. Fatigue is a silent workplace hazard that affects a person's ability to think clearly and respond appropriately. And construction workers, in particular, are prone to fatigue, given the nature of their work. Long hours in sometimes extreme conditions, paired with the physicality of their tasks compound the risk. To help place more emphasis on and bring awareness to the topic, we brought in Joe Balas, principal consultant at Human Factors Safety. Balas has more than 20 years of experience in the medical, OSHA safety and human factors engineering fields. In "The Cost of Fatigue," Balas covers the warning signs, causes and consequences of fatigue in the construction industry setting. Turn to page 40 to read more about how fatigue may already be affecting your business.



Last month, Managing Editor Elizabeth Manning and Associate Editor Rachel Fulford (second and third from left) visited B&G Equipment and Supply, a division of Brasfield & Gorrie, in Birmingham, Alabama, for the company's second annual Demo Day. The CBO team connected with Brasfield & Gorrie employees, learned about safe operation techniques and tried out some of the equipment on-site. Learn more about B&G Equipment and Supply at bgequipmentsupply.com.

Shifting gears, in this month's cover series, we drop the magnifying glass on marketing. Many of you may already have some general marketing efforts in place, such as company branding/signage, advertising, websites and social media accounts. But, as we've learned in our conversations with you, marketing is one of the areas in which you want more—more ideas, more help, more success. And that's what we're here to give you. Our cover series starts on page 24 and hits three different areas of marketing, offering creative ways to polish your existing program.

On page 24, "Watch This" refines the details of creating web videos and literally puts a lens on how contractors are making the most of YouTube and in-house video production. Now might be your time to get behind (or in front of) the camera.

Next up, on page 28, "Why Email Is Still a Top Marketing Strategy" comes to us from the chairman of the Construction Marketing Association (CMA) and shares six steps for communicating effectively and efficiently. CMA provides professional training, networking and recognition to marketers in the construction industry. Check out more CMA resources like this at constructionmarketingassociation.org.

Closing the section, on page 30, we have "The Future of the Phone Call." With more ways than ever to connect—social media, virtual meetings, online chat rooms, texting, email, etc.—and with smartphones at our fingertips, people are constantly tuned in all the time, everywhere. It might not come as a surprise that construction clients and business owners alike love to pick up the phone. This article dials in to the inventive ways that contractors across the country are finding more business with a few adjustments to their incoming calls.

Last month, our team attended the Construction Financial Management Association's (CFMA) Annual Conference & Exhibition in Miami Beach, Florida. Look for our post-conference coverage in the August issue, detailing what we saw and discussing emerging trends.

Take good care,

Kathy Wells

CONSTRUCTION BUSINESS OWNER is a member of the following organizations: NAWIC, CFMA, AED Associated Equipment Distributors, BPA WORLDWIDE

Construction Business Owner (ISSN 1551-3246) is published monthly by Cahaba Media Group, 1900 28th Avenue South, Suite 200, Birmingham, AL 35209. Periodicals postage paid at Birmingham, AL and additional mailing offices. Subscriptions: Free of charge to qualified construction business owners. Publisher reserves the right to determine qualifications. Annual subscriptions: U.S. and possessions $48, all other countries $125 U.S. funds (via air mail). Single copies: U.S. and possessions $5, all other countries $15 U.S. funds (via air mail). Call 205-278-2840 inside or outside the U.S. Postmaster: Send changes of address and form 3579 to Construction Business Owner, Subscription Dept., P.O. Box 530067, Birmingham, AL 35253. ©2018 Cahaba Media Group, Inc. No part of this publication may be reproduced without the written consent of the publisher. The publisher does not warrant, either expressly or by implication, the factual accuracy of any advertisements, articles or description herein, nor does the publisher warrant the validity of any views or opinions offered by the authors of said articles, descriptions or any advertisements. Submissions: We welcome submissions. Unless otherwise negotiated in writing, by the editors, by sending us your submission, you grant Cahaba Media Group, Inc. permission by an irrevocable license to edit, reproduce, distribute, publish and adapt your submission in any medium on multiple occasions. You are free to publish your submission yourself or to allow others to republish your submission. Submissions will not be returned. VOLUME 15 ISSUE 7

CONSTRUCTION BUSINESS OWNER

EDITORIAL
Editor
Kathy Wells
kwells@cahabamedia.com • 205-314-8268
Managing Editor
Elizabeth Manning
emanning@cahabamedia.com • 205-278-2827
Associate Editor
Rachel Fulford
rfulford@cahabamedia.com • 205-314-8269

CREATIVE SERVICES
Art Director
Melanie Magee
Digital Project Manager
Greg Ragsdale
Web Developer
Greg Caudle
Digital Community Manager
Amy Cash

PRODUCTION
Digital Advertising Traffic
Sonya Crocker
scrocker@cahabamedia.com • 205-314-8276

CIRCULATION
Audience Development Manager
Lori Masaoay
lmasaoay@cahabamedia.com • 205-278-2840

ADVERTISING
Senior Account Executives
Judy Rice
judy.rice@cahabamedia.com • 205-314-8262

Van Imbragulio
vimbragulio@cahabamedia.com • 205-314-8263

CLIENT SERVICES COORDINATOR
Sonya Crocker
scrocker@cahabamedia.com • 205-314-8276

EDITORIAL ADVISORY BOARD

Richard D. Alaniz
Partner, Cruickshank & Alaniz

Dr. Scott Arias
Program Coordinator/Assistant Professor, President
Eastern Kentucky University, ACE Consulting Company

Ben Ashburn
Instructional Assistant Professor, Department of Construction Science, Texas A&M University

Brian Barksdale
CPA, Partner, Carr, Riggs & Ingram LLC

Cal Beyer
Director of Risk Management, Lakeside Industries Inc.

Joseph Burkett
Chief Financial Officer, Cafco Construction, Management Inc.

Steven Davis
Senior Vice President and Director of Construction, McGriff, Seibels & Williams

George Hedley, CSP, LPBC
Certified Speaking Professional,
Licensed Professional Business Coach, Hardhat Presentations

Crawford E. McInnis
Executive Vice President, Epic Brokers

Gregg M. Schoppman
Principal, FMI Corporation

CAHABA MEDIA GROUP

Publisher
Walter B. Evans Jr.

VP of Sales
Greg Meineke

Creative Director
Terri Gray

Controller
Brandon Whittemore

1900 28th Avenue South, Suite 200 • Birmingham, AL 35209
Phone: 205-212-9402 • Fax: 205-314-8272



PAYROLL GOT YOU DOWN?

WE'LL GET IT OFF YOUR BACK.



payroll4construction.com

The #1 Payroll Service for Contractors. | (800) 949-9620

Circle 106 on card or visit cbofreeinfo.com.

JULY



COVER SERIES MARKETING

24 **Watch This**
How contractors are making the most of video & using YouTube for smarter online marketing

28 **Why Email Is Still a Top Marketing Strategy**
6 keys to communicating effectively & efficiently

30 **The Future of the Phone Call**
The new blueprint for boosting business with incoming calls

DEPARTMENTS

IN THE OFFICE

The Business Council

10 GEORGE HEDLEY
9 tips for finding, recruiting, developing & retaining the best

12 GREGG M. SCHOPPMAN
Why you need to audit & update your standard operating procedures

14 GUEST COLUMNIST: JON WITTY
Learn how automating workforce management tasks can increase productivity

16 **Business Strategy**
12 steps for developing & driving stronger business strategies

20 **Risk Management**
Why your insurance policy should cover more than just damage

22 **Software Solutions**
Learn how your company can pay & get paid faster

IN THE FIELD

33 **Equipment Matters**
6 reasons ADTs are a versatile solution for off-highway hauling

36 **Fleet Management**
How tracking tire data can identify maintenance opportunities & forecast needs

38 **Equipment Update**
A look at the new mentality making online auctions successful

40 **Jobsite Safety**
Studying the data on worker fatigue & how you could pay the price for exhausted employees







IN EVERY ISSUE

2 From the Editor
6 Industry News
8 Ask the Experts
43 Product Focus
48 Industry Stats

SEE IF WE FIT.

We are committed to your success, not just a sale.





FRED & THE ODE FAMILY
3 generations | 33 years | 5,000+ clients

FOUNDATION software

AMERICA'S #1 CONSTRUCTION ACCOUNTING SOFTWARE®

www.foundationsoft.com/cbo ***(800) 246-0800***

Circle 105 on card or visit cbofreeinfo.com.

Advanced Pavement Group Acquires Richard's Paving Inc.

Advanced Pavement Group has acquired Richard's Paving Inc. of New Castle, Delaware. This is the newest acquisition in Advanced Pavement Group Corporation's strategic expansion in the Northeast and Mid-Atlantic regions. Advanced Pavement Group and its companies have been providing pavement installation and maintenance services to the New York metropolitan area and central New Jersey for over 55 years. The addition of Richard's Paving, which has been in business for nearly 45 years, represents the expansion of Advanced Pavement Group's geographical reach into Delaware, southeastern Pennsylvania and northeastern Maryland. The Richard's Paving acquisition includes Refined Products Company Inc., a manufacturer of hot-mix asphalt and other materials. Visit advancedpavementgroup.com.

AEC BuildTech Conference to Begin in 2019

AEC BuildTech is a new event that will be held April 30 to May 2, 2019, at the Donald E. Stephens Convention Center in Rosemont, Illinois. Completely unique to the industry, BuildTech will feature an interactive expo floor where architects, engineers and contractors will experience tomorrow's building processes, materials and construction technologies in one convenient place. The event will also include a comprehensive conference program in five primary design/build applications: building envelope, roofing, flooring, plumbing and mechanical systems/HVAC. Attendees will discover essential information on new technologies, applications and policies affecting the entire build process from leading experts in AEC and mechanical systems professions focused on both residential and commercial projects. Plus, attendees will have the opportunity to earn continuing education credits for select sessions. AEC BuildTech's exhibit hall will be a resource for attendees, providing the opportunity to meet and network with leading companies introducing the latest products and technologies in building design, construction and the implementation of new ideas. With over 10 hours of dedicated exhibit floor time, including the opening night reception, numerous exhibits and product demonstrations on the show floor will provide solutions attendees can implement immediately. Visit aecbuildtech.org.

AEM Elects New Director

The Association of Equipment Manufacturers (AEM), an American-based international trade group representing off-road equipment manufacturers and suppliers, has elected Willie Harbert, vice president, sales, hydraulics group of Eaton, to AEM's CE Sector board to fill an unexpired term. AEM officers and directors work on behalf of all member companies, giving their time and talent to provide strategic direction and guidance for the association's business development initiatives in areas, including public policy, market data and exhibitions, as well as technical, safety and regulatory issues, and education/training. "AEM benefits from the support of our member companies and the leadership talents of our board members, who are selected to reflect an industry cross section," said AEM President Dennis Slater. As vice president of sales for Eaton's hydraulics group, Harbert leads the OEM sales, customer service and sales support organizations in the Americas. He has held various leadership roles within the company, including plant manager; director, business development; director, sales; and product line business unit manager. Prior to joining Eaton, Harbert served several years as a submarine officer in the United States Navy. Visit aem.org.

BOMAG Hires Vice President of Sales & Marketing

BOMAG Americas Inc. has announced Matt Cadnum as its vice president of sales and marketing. Cadnum will be responsible for the strategic sales leadership and support of BOMAG's dealer and rental channel partners, marketing, product management and cultivating new business development growth opportunities. Cadnum possesses a strong background in both aftersales and commercial sales responsibilities. The first 15 years of his career were spent in various aftermarket leadership roles with Allied Construction and Atlas Copco Construction Equipment. Most recently, Cadnum held senior management positions as vice president of sales in Atlas Copco Construction's rental sales team and vice president of the hydraulic attachments department for Epiroc (division of Atlas Copco Group). Visit bomag.com.

IROCK Hires Director of Sales & Business Development

IROCK Crushers announced Fred Gross as director of sales and business development. Gross will lead IROCK's sales and marketing teams, with a focus on bringing the company's dependable crushing and screening solutions to producers across the globe. Gross joins IROCK with an impressive OEM sales and business development background, as well as 25 years of experience in the crushing and screening industry. Prior to accepting the position, Gross served as the North and South American sales manager for Terex Cedar Rapids. He also has held positions with several other businesses in the industry, including WEIR Minerals-TRIO, FLSmidth, KPI-JCI and Metso. Gross will focus on strengthening existing dealer relationships, as well as growing IROCK's dealer network. In addition, he will play a strategic role in identifying new products to meet the changing needs of customers and to ensure their success during the forthcoming federal infrastructure plan implementation. Visit irockcrushers.com.

Kinshofer Acquires Atlas Transverse Cutter Business

Kinshofer, manufacturer of excavator and loader crane

30 YEARS

This year, John Deere and Hitachi Construction Machinery celebrate more than three decades of their longstanding joint venture, the Deere-Hitachi Construction Machinery Corporation. Utilizing united manufacturing facilities and integrated marketing and parts distribution, John Deere and Hitachi have been producing products since 1988. Since the start of operations together, Deere-Hitachi has manufactured over 55,000 hydraulic excavators for the North, Central and South American markets. Visit dhkernersville.com.

attachments, has acquired the Schaeff Transverse Cutter business from Atlas GmbH, a Germany-based crane and excavator manufacturer. The transverse, or drum, cutters are the first in Kinshofer's line of crane and excavator attachments, allowing the company to serve contractors in a wider range of industries, including tunneling and mining. The addition also gives contractors in construction, demolition and landscaping access to a broader range of attachments, all from one manufacturer. Kinshofer is rolling out the new product line globally as the WS-Series drum cutters. The cutters will be Kinshofer-branded and sold and supported by the company's dealer network. Kinshofer will also service units sold by Atlas and provide technical support, as well as parts, which are available through Kinshofer dealers. Atlas divested its cutter business to continue its focus on manufacturing cranes and excavators, the company's core products since 1919. Visit kinshofer.com.

▶ eSUB Construction Software Receives Autodesk Forge Investment

eSUB, provider of subcontractor mobile and cloud-based project management and labor productivity solutions, is the latest recipient of an Autodesk Forge Fund investment. The investment will accelerate product development for a deeper product integration between the Autodesk BIM 360 construction management platform and eSUB to create a seamless user experience and develop a stronger alignment among the construction project owner, architect and subcontractors. The investment from Autodesk is part of Series A funding, which includes participation from Revolution Ventures. eSUB Construction Software's cloud-based mobile platform delivers an integrated suite of point solutions designed for subcontractors, including time tracking, daily reports, issues, submittals, change orders, purchase orders, job costs, emails and more. Additionally, eSUB leverages Autodesk BIM 360 design management and collaboration capabilities to deliver plans and drawings directly to the field user. This is Autodesk's fifth Forge investment in a construction technology company over the past year. Autodesk Forge is a connected developer cloud platform, which enables customers to create customized, scalable solutions for engineering, construction and manufacturing challenges. As a continuation of their development efforts and a member of the Forge community, eSUB leverages cloud technologies to push tighter integration between their own internally developed web tools and core Autodesk applications. Visit esub.com and autodesk.com.

▶ Western Specialty Contractors Appoints Branch Manager

Western Specialty Contractors has promoted Ed Carter of Dallas, Texas, to branch manager of its Dallas/North Texas branch office. Carter was previously a sales and project manager at Western's Austin, Texas, branch. Carter will be responsible for running the branch office, which will include marketing, sales, estimating, oversight of operations and administrative functions, safety of all branch employees, and productivity of office staff and field crews. Additionally, Carter will be responsible for ensuring the branch's profitability by forecasting and managing the budget, identifying market trends, and ensuring quality control, as well as building and maintaining customer relationships. Carter has been with Western Specialty Contractors since 2015 and has 20 years of experience in specialty construction, including manufacturing, contracting, application of polyurethane coatings and waterproofing. He is a member of International Concrete Repair Institute (ICRI) and Austin Association of Facility and Maintenance Engineers (AAFAME). Visit westernspecialtycontractors.com.

▶ HDR Appoints Managing Principal of Phoenix Architecture Studio

Jason Mikkelsen, PE, LEED AP, ENV SP, has been promoted to managing principal of HDR's Phoenix architecture studio. He will lead a staff of 38 architects and engineers and help further develop the firm's presence in the Phoenix market. Overseeing HDR Phoenix's downtown location and managing the cross-sector facilities design center for the past 7 years, Mikkelsen will continue to be responsible for leading multiple teams to provide outstanding client service, build excellent relationships and deliver successful projects. Mikkelsen has 21 years of experience and has successfully managed and executed projects for Arizona State University in Tempe, Arizona; Pima County in Tucson, Arizona; the California Air National Guard in Mountain View, California; and the Marine Corps Air Station Miramar in San Diego, California. Visit hdrinc.com.

▶ ACI Funds Unprecedented 8 Research Projects

The ACI Foundation's Concrete Research Council (CRC) will fund an unprecedented eight research projects this year, including: Pre-Standard for Performance-Based Design for Wind, PCS Structural Solutions; Enhanced Ductility Reinforced Concrete Coupled Wall Systems, University of California, Los Angeles and California State University; Behavior of Reinforced Concrete Coupled Walls, Washington State University; Shear Friction Capacity of Concrete Joints with High-Strength Reinforcement, University of Washington; A Collaborative Study for the Development of a Standard Critical Chloride Threshold Test Method, University of Missouri; Structural Nanomodified Concrete: An Investigation of Critical Properties, Northwestern University; Developing a Guideline for Life Cycle Assessment of Structural Concrete through Meta-Analysis and Harmonization, University of Sherbrooke; Guideline Development for Use of Recycled Concrete Aggregates in New Concrete, New Jersey Institute of Technology. For more information about each of this year's awarded projects, including additional funding partners, research team, ACI committee involvement, project details, visit acifoundation.org and concrete.org.

▶ Hyundai Construction Equipment Adds R&S Industries Inc.

Hyundai Construction Equipment Americas has announced the expansion of its North American authorized dealer network with the addition of R&S Industries Inc. in Clovis, New Mexico. R&S has a strong background in service maintenance that allows them to keep their customers up and running with ease. R&S will be added to Hyundai's South Central territory. With the addition of this new dealership, Hyundai's North American network now includes over 70 dealerships, operating in over 150 locations, offering sales, service and parts for the full line of Hyundai excavators, wheel loaders, compaction rollers and other construction equipment. Visit hceamericas.com and rsindinc.com.

NEED MORE NEWS?
constructionbusinessowner.com/news

And the Award Goes to ...

What competitive bidding strategy works best in today's construction climate?



MARCUS MOONEY, AIA, DBIA
Director of Design Build,
KAI Design & Build

In the current economic climate, our construction trade partners are very busy. Unfortunately, for construction consumers like us, garnering interest in our projects within the contracting community is becoming more difficult. As the market puts more strain on contractors, they are more selective in choosing which projects they pursue. Most are seeking fairness in the selection process. They understand the need for competitive bidding to keep the market honest, but prefer to compete against a select group of peers with similar, aligned abilities and project capacity.

To achieve this, we often prequalify three to four contractors that have experience with the type of work we need done and meet all eligibility and/or qualification criteria (business certifications, labor availability requirements, etc.) that are key to the project's success. With this method, we get sufficient bid coverage, and our bidders are encouraged to participate due to the limited competition and higher potential to be successful.

Our goal is to make the bidding process as lean as possible. To do this, we stick to schedules and timelines and make every effort to reduce or eliminate addendums issued during bidding to encourage contractor participation and limit their need to rework proposals.



TIM MCLAUGHLIN
Preconstruction Manager,
Hoar Construction,
Florida Division

Because Florida is one of the hottest construction markets in the country, attaining adequate bid coverage is always a challenge. Relationships are king in our industry, and this is especially true for our trade partners. Our relationship strategy focuses on three actions—connect, stay engaged and give feedback.

1. *Connect*—We belong to multiple trade associations and make an effort to build solid relationships at events. Because we stay in constant contact, our partners know when our bids are coming and make us a priority when resources are strained.
2. *Stay engaged*—During the bid process, we talk with our trade partners on a weekly basis. This not only keeps our project at the forefront, but it also encourages them to review the documents earlier and talk through the details and specifications.
3. *Give feedback*—What's the one way to ensure you don't get coverage? Don't give feedback. In our business, no one wins every project. We believe in letting the trade partners know as early as possible if they didn't have a successful bid and why. It's how we would want to be treated.



ROBERT LEWIS BOSTWICK, FAIA
Chair, AIA Project Delivery
Knowledge Community,
American Institute of Architects

Today, we're all enjoying a busy construction climate, and many architects and builders are working close to their capacity. So, it's a good time to reconsider our strategy for competitive bidding. In short, I recommend we learn to say "maybe" to projects instead of always saying "yes." In this climate, a strategy of selectiveness should replace the strategy of bidding on every opportunity.

We should all start by considering the qualities that will lead to a more enduring business—relationships, value and performance—and begin by asking whether the owner requesting a competitive bid recognizes these same qualities. Is the owner seeking the lowest possible cost? Or, is the owner looking to create a relationship with a reliable partner who is committed to applying all their talent to create the best possible value for the project? Will the partner seek to understand the owner's true need and perform professionally and collaboratively to achieve it?

Competition is important as a driver of efficiency, yet, when used as the sole criterion for selection, it very often leads to disappointing project results. Now is the time to be selective so that we can achieve great outcomes.

Learn. Grow. Improve.

Knowledge that's ready for you when you're ready for it



TOPICS

DAILY REPORTS & HOW YOU CAN USE THEM TO TRANSFORM YOUR BUSINESS
Learn what you might be missing from this project management mainstay

WHAT DOES LEAN REALLY MEAN?
Understanding lean construction & creating a plan for more profit

HOW TO MASTER TECHNOLOGY STRATEGIC PLANNING
Properly leveraging tech to achieve your strategic business objectives

THE ROI OF SIMULATION-BASED OPERATOR TRAINING
Understanding this technology & measuring the benefits before you jump in

CONSTRUCTION BUSINESS OWNER WEBINAR

To download the entire series FREE, visit
constructionbusinessowner.com/webinars

Winning the War for Talent

9 tips for finding, recruiting, developing & retaining the best



GEORGE HEDLEY, CSP, CPBC, is a professional construction BIZCOACH and industry speaker. He helps contractors build management teams and get their businesses to work for them. He is the best-selling author of "Get Your Construction Business To Always Make A Profit!," available on amazon.com. Email George at gh@hardhatpresentations.com to sign up for his free e-newsletter, start a BIZCOACH program, attend a 2-day BIZ-BUILDER Boot Camp or get a discount at hardhatbizschool.com online university for contractors. Visit hardhatpresentations.com for more information.

Ask George

To submit a question for George Hedley, email Editor Kathy Wells at kwells@cahabamedia.com.

I recently received the following message: "We operate in Tennessee and the surrounding states, building and remodeling fast food restaurants. Each project takes 10 to 14 weeks. Our crews leave our area on Monday mornings and return on Friday afternoons, so they have weekends at home. Though they are paid an additional amount for these nights away, we have a difficult time finding experienced employees. We believe we could easily double our sales volume without adding much additional fixed cost, but we need field superintendents and carpenters to do the work. We offer a competitive wage for our area, with benefits beyond most competitors', and advertise in local newspapers, on Craigslist and recruiting websites. We have worked with headhunters, but they haven't found anyone close to our location. We have considered radio and television ads, but have not pulled the trigger, placing signage in high-traffic areas instead. Still, we're unable to find anyone we want to offer a job, finding seemingly inexperienced people who appear to only want a paycheck. Do you have suggestions for how to find skilled people in today's marketplace?"

Enticing and retaining people in an industry as demanding as construction requires a more than competitive wage and benefits package. Remember that in attempting to attract people to work for your company, you will be contending with local competition.

For example, field construction workers are only paid when there is available work and good weather, while office employees, truck drivers, mechanics and service technicians for large manufacturing companies work year-round with full benefits, paid vacations and holidays, healthcare, stock options, and a full retirement package.

As management consultant, educator, and author Peter Drucker once said, "The ability to make good decisions regarding people represents one of the last reliable sources of competitive advantage, since very few organizations are very good at it."

Good owners and managers realize their job is dependent on their ability to find, recruit, develop and retain the best talent available by following nine essential tips.

1. *Determine what people you need to hire or replace*—Draft a workflow chart, making sure someone is assigned to every position or task your project requires. Many tasks can be handled by one person. Hiring administrative help allows other workers add more value by focusing on imminent tasks rather than administrative work. Examine your existing talent to determine if the right people are in the best positions, completing their jobs at a standard necessitating their pay. Too often, companies are designed around what people are good at, rather than what talent is required.
2. *Put someone in charge of your hiring program*—Assign a coordinator to



manage the entire hiring program by placing ads, screening candidates, scheduling interviews, maintaining recruitment files, researching compensation packages of local competitors, sorting and rating resumes, attending local hiring fairs, staying in touch with local training schools, and seeking qualified recruiters.

3. *Pay top dollar*—Offer above-market benefits to attract the best talent. A coaching client sent me the following email regarding his hiring situation: "George, I'm having a really hard time finding a good superintendent for a reasonable salary. I currently have one, but we're starting to get more projects and need help. It's tricky because I attract clients that have "limited budgets", so it's hard for me to price jobs with any money slated for supervision. Where do you find good people? I've tried all the popular online websites and am only finding unreliable and untrustworthy help. Do you have any other recommendations?" The dilemma: hire and pay top dollar, growing your company and making more money, or wait until you get enough backlog and then pay someone if you think you can afford it. I'm confident that if you take a risk, resist fear of hiring, and offer top dollar and benefits, you will find a good superintendent.
4. *Attract the top players*—Seek employees with experience, talent, intelligence, potential, willingness to work hard, a positive team attitude, consistency, responsibility, loyalty, determination, competitiveness, commitment, competence, motivation, and desire to learn and improve. Remember that people generally do not change much. Determine the type of talent they have, not the type of talent you hope they can develop. Have your best employees help you make hiring decisions.
5. *Promote and reward recruiting*—Make recruiting a top priority for everyone. Consider offering a signing bonus to new employees and a referral bonus to existing employees who recommend someone you end up hiring. This can be paid in increments to make sure new employees work out. Offer employee-referral incentives to subcontractors or suppliers.
6. *Make it easier for recruits*—Enlist the use of an employee applicant voicemail extension with a recorded greeting offering instructions on applying. Hold the first interview and screening process over a short phone call. For your own records, keep the application process simple, using a basic, standard application form. Consider adding candidate photos to your files to make applicants easier to remember.
7. *Develop and manage a talent outreach program*—Hold seminars or workshops for potential applicants at your business. Get involved at high schools and trade schools, placing hiring announcements on job boards. Offer summer intern positions, part-time jobs and craft-training opportunities.
8. *Place compelling ads in all the right locations*—Always include company, signing bonus and full contact information. In multiple languages, post your job listings online, on project signage, on banners, on company trucks and in newspapers. Create hiring brochures to hand out at your office and at job fairs. To go a step beyond, you can create a careers page on your website with exciting videos of the work you do.
9. *If all else fails, pay professional recruiters*—Hiring is tough, and without a real effort, it won't happen. If you know you need it and just can't find the time to make the concerted effort yourself, consider using a professional service for the task.

The No. 1 reason companies don't grow is fear of hiring. Only you can focus on fixing your hiring problems. Don't be afraid to take a risk and do what you need to do to achieve the results you want for your business. **CBO**

What Version Are You Using?

Why you need to audit & update your standard operating procedures



GREGG M. SCHOPPMAN is a consultant with FMI, management consultants and investment bankers for the construction industry. Schoppman specializes in the areas of productivity and project management. He also leads FMI's project management consulting practice. Prior to joining FMI, Schoppman served as a senior project manager for a general contracting firm in central Florida. He has completed complex construction projects in the medical, pharmaceutical, office, heavy civil, industrial, manufacturing and multifamily markets. He holds a bachelor's degree and master's degree in civil engineering, as well as a Master's of Business Administration. Schoppman has expertise in numerous contract delivery methods, as well as knowledge of many geographical markets. Visit fminet.com or contact Schoppman by email at gschoppman@fminet.com.

Whether it is to mitigate the risk of security breaches or simply to provide new features, the ubiquity of updates and upgrades has become ingrained in the way society uses everything from smartphones and tablets to video game consoles. Unfortunately, this culture of consistent renovation does not automatically transfer to business processes. One document rarely sees the prevalence of such renewal: the procedures manual. In fact, exact dates could be assigned by the coating of dust that covers the three-ring binder sitting atop the shelves of managers' and superintendents' offices across the industry.

It is the same ambivalence toward monitoring company procedures that has led to an ever-increasing lack of consistency in the way managers and superintendents govern and lead their projects. Businesses often wrestle with maintaining standards of management, thus creating "Bob's Way" and "Mary's Way," rather than one standard way of operating. In the end, the final version is largely dependent on the individual, rather than a set of best practices that have been tested, vetted and applied by the management team.

RELEVANCE

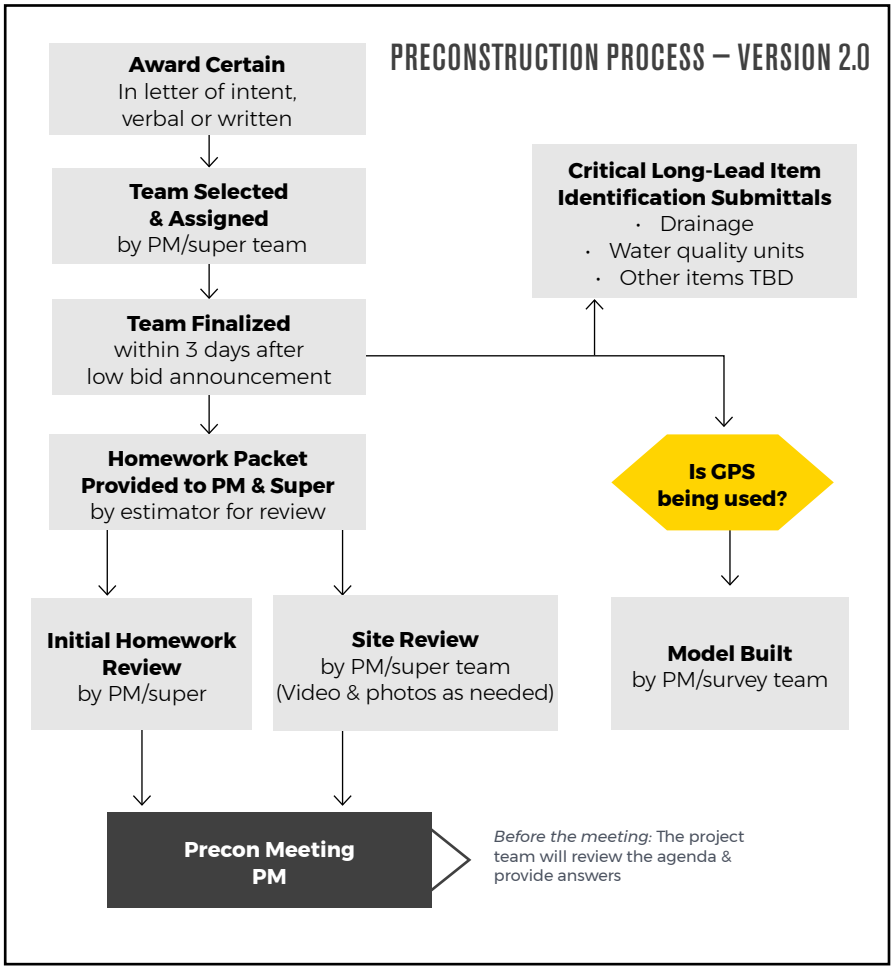
The first question every company owner should ask relates to how loosely management procedures are driven. For instance, is the operations manual a suggestion or a standard? One reason management sometimes becomes apathetic is the presence of an irrelevant standard. If the process is not relevant to the current business model, it may quickly be scrapped. Are the processes geared toward a hard-bid environment even though the business is now focused on design-build? Are the tools integrated into the current technology platform? It's easy to see why a superintendent or manager might develop their own processes when the company is deeply grounded in an antiquated system.

PRECONSTRUCTION PROCESS – VERSION 1.0

When a project starts, the first steps for a project manager are:

- Assign a project number. To do this, see the controller, who can provide the latest number in the sequence.
- Coordinate with the estimator to prepare for and conduct the hand-off meeting.
- Begin the meeting with a discussion about the project's drawings.
- Discuss safety. For this conversastion, be sure to bring in the safety director and cover fall protection, competent persons, etc.

This is not to say that the original versions should be abandoned. Better yet, this is the time to integrate version 2.0—an improvement upon previous processes. It is imperative that you embrace a culture of continuous improvement to capitalize on these updates. Strict adherence to the status quo is increasingly dangerous in this quickly evolving marketplace. Even if the enhancement is as simple as revising a preconstruction planning agenda or creating a new version of the last planner tool, no task should be relegated to the status of sacred, immutable territory. In fact, small revisions might get the engine of innovation started and lead to greater incremental progress.



VISUALIZATION

There is something surreal about using words to describe a thing that is multidimensional. Consider an engineer who uses a written narrative to illustrate a complex system like a water treatment plant. Rather than using drawings, the engineer describes everything in words. This makes the system seem even more complicated and might only be understood by the engineer. Why take the same approach to internal processes? Consider the comparison of the Preconstruction Process Versions 1.0 and 2.0 provided here.

This commentary is less about whether the steps listed are correct for the process and more about creating a linear, logical roadmap for individuals to follow, which is even more important in an industry (like construction) that relies so heavily on visual models and depictions to provide direction. Once this is done, steps in the process can be assigned ownership to drive the most important element of version control—accountability.

ACCOUNTABILITY

Are company procedures presented as suggestions or dogmas? Most leaders would say there is an expectation that procedures are strictly followed. But, how does the management team know if they are followed?

Often, the only indication is in the monetary gain or loss at the end of a project, which is the equivalent of gauging the success of a diet simply by stepping on a scale and failing to measure food intake or exercise. For a company to effectively manage the efficacy of its processes, it must measure them proactively.

Examples of behavioral metrics to consider measuring include preconstruction planning, look-ahead planning (last planner for lean companies), close-out meetings, post-project reviews and trade contractor coordination.

For instance, if a company begins 10 projects in a month, there should be evidence of 10 preconstruction planning meetings. While it sounds puerile to measure processes, such as these, it has a demonstrative impact on the bottom line. The metrics can also reveal a great deal about the aforementioned categories. Weak adoption of processes may indicate deeper issues, such as lack of relevance. Without this information, companies develop blind spots that mask the real problems in their operations. Measuring monthly costs is important, but simply using these metrics to manage a business is like driving a car with the rearview mirror only.

Most operating manuals are 80 to 90 percent effective. Preconstruction planning doesn't change that percentage dramatically enough to necessitate wholesale overhauls. However, it is imperative that businesses ensure these guidelines are in fact driving the processes, by following, measuring and monitoring them throughout each project. CBO

Automation in Motion

Learn how automating workforce management tasks can increase productivity



JON WITTY is vice president and general manager of Sage Construction and Real Estate solutions, which provides contractors, developers and property managers with a complete solution to manage an entire project life cycle with precision and efficiency. With more than 30 years of experience in technology, enterprise resource planning, project management and construction, Witty is responsible for driving Sage's business strategy and initiatives in the construction and real estate market. Visit sage.com.

With today's labor shortage, it is essential that construction companies streamline business processes and eliminate time-wasting tasks, so staff can focus on important work. Automating workforce management processes, such as timekeeping and payroll, is a great way to free up some misspent time and increase productivity. And it is becoming easier with the increased use of smartphones and tablets on the jobsite and remote time capture applications that can link your field information with your company's payroll and accounting systems.

If you are still unsure whether automating these processes is right for your business, consider the following benefits.

MORE ACCURATE RECORDS

Many field managers are still reporting time on a weekly basis. The information is often incomplete or inaccurate, as it's often difficult to remember who did what and for how long, especially when reports are compiled several days after job completion.

Keeping track with paper timecards or a Microsoft Excel spreadsheet is also difficult and can contribute to additional errors. Furthermore, managers are often in a hurry, scrambling to review and approve timecards so that workers can get their checks on time, and are prone to mistakes. If the times entered contain errors, payroll staff is working with inaccurate information, and if you pay people incorrectly, you can face penalties.

You also have to consider that time and payroll are not always straightforward when you factor in things like certified payroll, overtime, tax rates and workers' compensation rates. Automated time and payroll systems can take into account these different situations and multirate structures, reducing the risk for error while helping you remain compliant and even meet stringent requirements, saving money in the long run.

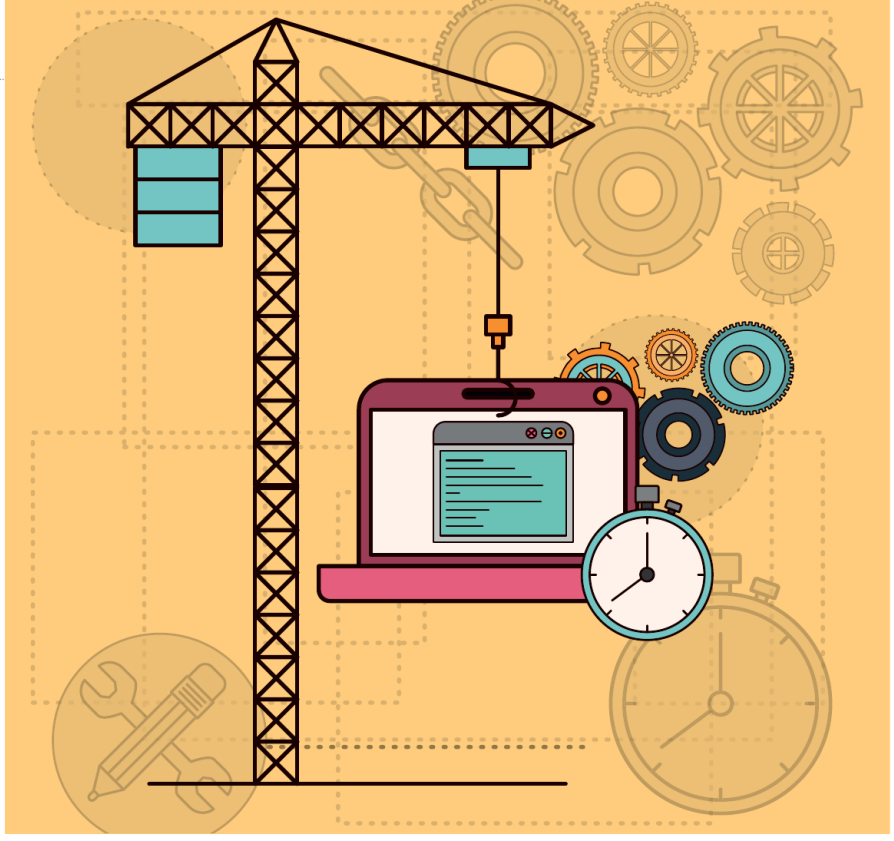
BETTER BUSINESS VISIBILITY

Automated time capture and payroll provide contractors with an up-to-date record of labor costs, allowing for greater confidence in the data they have available. You can make better, faster business decisions when equipped with updated, accurate information.

Project managers can easily compare the labor budget versus the actual time put in while a project is underway. Having early visibility into estimated versus actual labor costs and hours allows contractors to make course corrections when work doesn't go according to plan. Field management can speak directly with workers to find out what happened, quickly discovering and correcting paperwork if any overage requires a change order. The sooner you can start the change order process, the sooner you will be paid for it.

GREATER EMPLOYEE RETENTION

Scrambling to capture time not only causes unnecessary stress for those in the field, it



also makes things more difficult for those in the back office. Accounting and payroll staff are often frustrated by the difficulty of collecting time data. When the information arrives late or is incomplete, they struggle to quickly process the payroll so that it can be distributed on time.

Making sure timecards are captured, approved and sent on the same day to the payroll department will make their lives easier and reduce time and money spent processing. Automating the payroll process further streamlines their workload and reduces room for error. Employees will be much happier and more productive when they have all the tools they need to complete their work without wasting unnecessary time, making them more likely to stick around, which is beneficial for all involved.

A COMPETITIVE ADVANTAGE

Labor costs are the biggest risk for losing money on a construction job, and for many contractors, it is often their weakest link in job management. With bid prices and margins extremely tight these days, everyone is looking for ways to better manage project costs and improve efficiency.

In the 2018 Construction Outlook survey Sage conducted with the Associated General Contractors of America, 67 percent of contractors surveyed said they plan to use mobile technology for daily field reports, while 59 percent reported planning to use it for employee time tracking and approval. Improving the timeliness and accuracy of your labor time and payroll processing can help keep your projects on time and on budget, and that translates into a competitive advantage.

WHERE TO BEGIN

Any process change can seem daunting, but don't be discouraged. You can always start small. It doesn't have to be an all or nothing proposition right away.

Consider the following tips to help you begin transitioning:

- *Get key stakeholders on board*—As with any change to your business, it's important to start by getting all key stakeholders on board. Identify employees who are fundamental to rolling out the changes and be sure to involve them in the planning process. If they see the benefits and are willing to learn, it will help solidify their long-term buy-in and make the transition much smoother.
- *Invest time in planning*—Investing the time to plan will save you time overall. Be sure to identify what it is you hope to accomplish and set clear goals. Communicate all changes to your team and set proper expectations. Not everyone will pick up the new processes overnight, so be sure to factor in time for training.
- *Select the right tools*—Once you know your goals, make a list of the technical requirements needed to achieve them and use that list to guide your software selection. Look for remote time-capture software that not only operates on mobile devices, but can automatically transfer time information into your payroll system. Payroll software can also automate tax payments, e-filings and direct deposits. Many options allow employees to view their pay and benefits information online through a self-service portal. Employees appreciate having access to this information, and it reduces the number of payroll-related questions for you or your staff to answer.
- *Be realistic*—Follow your transition strategy, but stay flexible. Your preparation will help to significantly reduce obstacles, but there will always be situations you can't plan for or avoid. You might need to reassess your method as you implement changes. Identify what is and is not working and make changes accordingly. Having a clear strategy upfront and measuring your progress regularly will help to guide the process and accomplish your goals.

If you're still capturing time using manual records, consider making the switch to automated. It requires an initial commitment of time and resources but is well worth the investment. **CBO**

Fail to Plan & Plan to Fail

12 steps for developing & driving stronger business strategies

BY PRESTON INGALLS

Benjamin Franklin is credited with saying, "If you fail to plan, you are planning to fail." The purpose of business planning is to set overall goals for your business and to develop a strategy to achieve them. This includes implementing deducting and balancing approaches, making decisions, setting a destination or direction, and action planning. However, many construction companies have no long-term plan, with some even touting, "We just bid and pray."

Today, the challenge for leaders at every organizational level is no longer just to outmaneuver and outhustle the competition; it is to outthink them in ways both large and small, developing a distinctive point of view about the future and helping your organization achieve the competitive advantage.

For example, if you would have purchased the computing power found in today's iPhone in 1991, it would have cost you $3.5 million. The world is changing quickly. Inevitably, so is the construction industry. Accordingly, running a business requires planning ahead for ever-changing factors in ways such as:

- Planning for succession
- Expanding products and services
- Strategizing for responding to the competition's advancements
- Developing personnel
- Implementing new technology
- Improving margins and costs
- Leveraging strengths
- Addressing weaknesses



Strategic planning involves stepping back from your day-to-day operations and asking where your business is headed and what its priorities should be. The Balanced Scorecard (BSC) is a strategy performance management tool used to keep track of staff accomplishments and activities and focus efforts in a laser-sharp manner.

Today, the challenge for leaders at every organizational level is to outthink the competition, in ways both large & small, developing a distinctive point of view about the future & helping the organization achieve the competitive advantage.

THE BALANCED SCORECARD

The BSC was developed in the early 1990s by Doctors Robert S. Kaplan and David P. Norton. While they named this system the "Balanced Scorecard," by 2000, it had gained momentum as part of a more comprehensive strategic management system.

This made BSC a management tool, rather than just a measurement system, enabling organizations to explain their vision and strategy and convert them into a series of actions and initiatives. BSC does this by providing feedback around both the internal business processes and external outcomes to continuously improve strategic performance and results. When fully deployed, the BSC transforms strategic planning from a theoretical activity into a series of actions, metrics and control points. Kaplan and Norton describe its innovation as:

"The Balanced Scorecard retains traditional financial measures. But financial measures tell the story of past events, an adequate story for industrial-age companies for which investments in long-term capabilities and customer relationships were not critical for success.

These financial measures are inadequate, however, for guiding and evaluating the journey that information-age companies must make to create future value through investment in customers, suppliers, employees, processes, technology and innovation."

The traditional BSC views the organization from four perspectives, then facilitates development of goals, metrics, data collection and analyses relative to each of these perspectives:

- Learning and growth
- Internal business
- Customer
- Financial

Kaplan and Norton did not disregard the traditional need for financial data, but they pointed out that the current emphasis on financials lead to an "unbalanced" situation with regard to other perspectives. Ultimately, the emphasis moved away from an effort to design a strategy to the execution and control of a strategy.

As a BSC strategic planning tool user since 2001, I, like many others, found putting too much emphasis on balancing individual perspectives to be a distraction. As a result, I designed my own step-by-step process, focusing on the development of a tactical plan that could be measured and monitored. The objective was to develop a strategic plan, but more importantly, to operationalize it.

I call the model the 12-Step Plan or The Plan. It can be used for business, organization, division or department strategizing. The graph on page 16 illustrates the steps to orient an organization toward a specific course or trajectory.

PRELIMINARY WORK

Business planning requires a fair amount of information-gathering homework, such as customer/user surveys, market analyses and projections, competitive analyses, critical-incident results, etc. Scenario planning, developed by the RAND Corporation for military planning, is another excellent planning tool to examine various contexts.

GETTING STARTED WITH THE PLAN

Traditionally, those in senior management looking to implement The Plan would do so during a two-and-a-half-day planning retreat. This retreat should be conducted off-site, where participants stop working on the present and work on the future by engaging in a focused environment, free of distractions. The following offers an introduction to the 12 steps of The Plan.

1. Assess where you are currently. Brainstorming is an ideal method to engage the group and start the process.
2. Create a vision of where you want to go. If you have already set a vision, reassess its value and purpose while paring it down to its essence for easy recall by participants. The group should describe the future state of your successful business, department or division. Conducting a visioning exercise like this—where an enviable organization with a successful journey and minimal turnover rate is described—helps plant the seed for an important launch. Then, determine what words best describe that state (in a future tense). Use examples to help give the participants possible ideas. This part of the process takes a few hours but gives a steering device that helps create the banner you wish to generate.

3. Develop a mission statement, or purpose statement, for how you will make that vision happen. This is your collected purpose, or intent, summed up in a few words or sentences and is based on core values, principles and decision-making influences.
4. Re-examine core competencies, determining unique strengths and capabilities you and your group possess that are critical to success and are difficult for other organizations to duplicate. This will be important to focus on when leveraging these strengths later.
5. Conduct a SWOTT assessment (strengths, weaknesses, opportunities, threats and trends), which is a fairly lengthy process, involving reexamination of customer surveys, critical incidents, market analyses, financial projections, etc. Use equal amounts of facts/data and opinions/assumptions at this point. Strengths and weaknesses are internal, while opportunities and threats are external. Trends are what is currently common as far as technology, shifts in marketplace, growth, increase in energy costs, legislation, recruiting, etc. This part of the process, if done correctly, takes hours to do, but it serves as the basis of identifying gaps or potential deficiencies that need to be addressed, as well as strengths that should be leveraged. Mind mapping is a good visual tool to show relationships and connections.
6. Identify the strategic issues that need to be addressed to move toward the vision by using the core competency input along with key SWOTT elements. Identifying capabilities will be a fundamental tool in the finished plan, so Porter's Five Forces Model works well to examine competitive influences. Drawing from industrial organization economics to derive five forces that determine the competitive intensity and, therefore, the attractiveness level of an industry in terms of its profitability, the model is another tool for examining the strategic issues. It's important not to rush this step, as this is where the strategy is formulated.



7. Set goals that address the strategic issues identified in step six. This means taking each strategic issue and developing a goal to solve the issue and/or leveraging a strength or capitalizing on a trend to help set solid plan objectives.
8. Take an incubation period, in which participants silently test each goal against the strategic issues and the vision by asking:
   - Will this goal allow us to meet the long-term needs of our vision?
   - Could neglecting to strive for it slow our progress?
   - Does this goal capitalize on our core competencies and abilities?
   - Are we overlooking an additional objective that could help achieve our vision?

   This is a testing phase to ensure you're choosing the right course of action through silent testing followed by group discussion centered on possible revisions and modifications.
9. Identify key performance indicators for each of the goals so that individual targets and their due dates can be established. It is also critical to put metrics in place to measure this progress.
10. Identify the actions or projects that will be undertaken to achieve the set goals, which can be individual initiatives, but will probably be team initiatives. Working in teams ensures more, higher-quality ideas and engagement, which leads to ownership of the end objectives. Decide which projects or processes you will refine or develop to address this goal. This is the tactical stage.
11. Identify specific responsibilities to make the plan actionable and operational. Assign a senior leader to be a sponsor for each responsibility, ensuring ultimate completion and success.
12. Make sure there are names, responsibilities, key performance indicators and targets for each goal. A dashboard can be set up to monitor and review progress. Periodic review meetings should be scheduled as standing (versus ad hoc or when convenient). Progress requires reviewing and addressing any slippages with sponsors and holding leaders accountable. Asking critical questions can keep the focus on delivering results. **CBO**

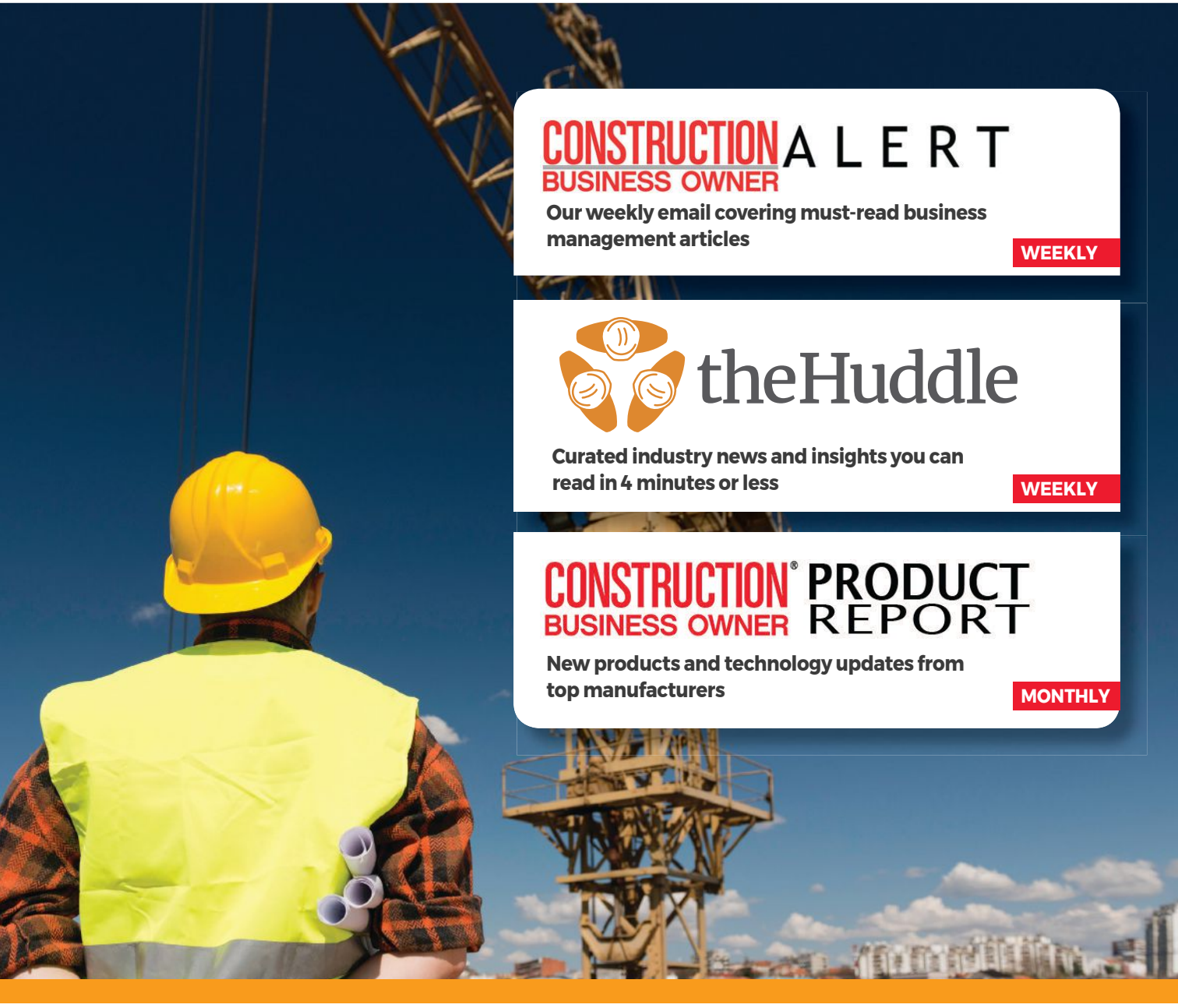
Preston Ingalls is the president and CEO of TBR Strategies. He holds two bachelor's degrees in engineering and a master's degree in organizational development. Visit tbr-strategies.com.



3 Ways to Stay on Top

of the ever-changing construction industry

Construction Business Owner's newsletters are filled with timely news, industry insights and products, and are easy to read on any device. Sign up now to receive the best in construction business management content, special offers and much more.



Subscribe today!

Get your copy of all three newsletters at

constructionbusinessowner.com/subscribe

Can Your Business Afford Interruption?

Why your insurance policy should cover more than just damage

BY KEITH BOYER

In an alert issued April 16, 2018, the United States and the United Kingdom published a report advising organizations and individuals worldwide that Russians were attempting to access devices controlling the flow of internet traffic.

One day later, the Federal Reserve reported that during last year's record-breaking, weather-related disasters, 65 percent of affected companies attributed their financial losses to power or utilities outages.

If your construction company loses internet access for an extended period of time, whether it's due to Russian hackers or weather-related power outages, it will be protected against financial loss only if your business operations are covered by business interruption insurance.



PREPARE FOR THE WORST

In the case of last year's weather-related events, most affected businesses did not have business interruption coverage.

According to a 2017 Federal Reserve report, "Firms' insurance holdings appear to be mismatched to the sources of their damages, leaving uncovered losses." While 65 percent of the businesses affected by the calamitous events pointed to loss of power or utilities as the source of their financial losses, only 17 percent were covered by business interruption insurance—also known as business income insurance—at the time of the event.

Of the companies suffering financial losses due to the outages, those either without business interruption insurance coverage or inadequate limits for business interruption insurance had no choice but to rely on personal wealth, personal and business credit cards, business cash, Small Business Administration (SBA) loans, loans from friends and relatives, federal relief funds, or some other source of external funding.

Under the best of circumstances, construction businesses experiencing a business interruption due to an external event are challenged to rebound. According to a report issued by the Federal Emergency Management Agency (FEMA), 40 percent of businesses do not reopen following a disaster. On top of that, another 25 percent fail within one year following the event. Business interruption coverage can greatly decrease the odds of total business loss.

UNDERSTAND THE DIFFERENCE

What are business interruption insurance and extra expense insurance? Let's start by describing standard property insurance, which covers physical damage and losses

to a business. These losses may include furniture and equipment burned in a fire, an office building damaged by a fallen tree, stolen equipment, stolen merchandise, broken windows, or a restroom ruined by a broken pipe, etc.

Standard property insurance coverage can help the business to recover from damage and loss by paying the costs of rebuilding or replacing the damaged tangible property. But what about losses resulting from a construction business's inability to operate because of property damage? For this type of loss, business interruption insurance is needed. Generally, business interruption insurance will cover three types of losses:

- Revenue lost due to a business closure
- Fixed expenses, including rent, utility and payroll costs
- Extra expenses resulting from a shift of operations to a temporary location

To determine a business interruption loss amount, you must be able to establish what the business would have earned had the event not occurred.

Insurance companies will take into account past tax returns, profit and loss statements, projected sales and non-continuing expenses. To properly project losses, the affected company should keep accurate records on file. It is important to note business interruption coverage cannot be purchased as a standalone policy; it can only be purchased as part of property coverage.

It is also important to note that business interruption coverage must be related to the underlying policy, as the coverage will only extend to causes of loss (events) outlined in the core coverage. For example, business interruption coverage for a cyberattack can only be purchased with an underlying cyber insurance policy.

FIND AN EXPERT

As in all insurance policies, there are limitations and exceptions to business interruption coverage. The policy must be carefully written according to the unique needs of your business. The best place to start is with the help of a broker with whom you have established a trusting relationship. He or she will understand both your business needs and your present coverages, along with having wide insurance marketplace access, which will serve to support your goals. CBO

Keith Boyer is managing partner at KMRD Partners Inc., a risk and human capital management consulting and insurance brokerage firm that serves clients worldwide and is located in the Philadelphia, Pennsylvania, area. KMRD works to protect clients' assets by reducing their cost of risk. Contact Boyer at kboyer@kmrdpartners.com. Visit kmrdpartners.com.





Circle 113 on card.

Solving Working Capital Challenges with Supply Chain Financing

Learn how your company can pay & get paid faster

BY MIKE ANTIS

Payment terms are lengthening in nearly every industry as buyers seek to make the best use of their capital, and construction is no exception. Project owners are implementing longer payment terms, which is especially challenging for the subcontractors performing the work.



THE CHALLENGE

The working capital challenge for construction subcontractors is complex. It stems from multifaceted factors beyond the trend in payment terms, including traditional industry financial processes and a challenging credit/financing landscape for small- and mid-sized businesses.

Because of the traditionally long and uncertain payment waiting periods for construction subcontractors, their expenses for project work, such as payroll and materials, are outlaid long before payment is received. In addition, these waiting periods can vary greatly, making accounting difficult. Pay-when-paid and pay-if-paid clauses, as well as retention rates, can exacerbate the challenges.

Together, these factors create cash flow difficulties that can dramatically impact working capital management, leading to financial strain and—in the worst case, failure—leaving forward-thinking general contractors looking for innovative ways solve the problem.

One strategy employed by some builders entails helping their subcontractors address longstanding working capital and cash flow challenges. The arrival of supply chain finance (SCF) programs in construction, an evolving approach, brought changes to the flow of funds, enabling faster and more predictable payments.

SUPPLY CHAIN FINANCE

SCF techniques enable buyers of goods and services to maintain and enhance their own working capital while improving the working capital of their suppliers and alleviating cash flow challenges through accelerated, predictable payments. In construction, general contractors deploying SCF programs work with third-party funders to arrange payment of approved invoices on specified dates. Participating subcontractors receive their payments at an agreed upon time—significantly earlier than they traditionally would be paid—in exchange for a modest fee added to the invoiced amount.

According to a recent whitepaper from SCF specialist Greensill, "More than $3.5 trillion of cash is locked up in working capital around the world at any one time." Recognizing an opportunity to unlock this capital, many industries have turned to SCF to help decrease their payables and protect their operations. In fact, Citi research estimates half of all Standard &

Poor's (S&P) 500 companies use SCF to support their suppliers and optimize working capital, including Procter & Gamble Co., DowDuPont Inc., Rolls-Royce and Coca-Cola.

However, until recently, SCF was not widely used in construction, largely because lenders that fund SCF programs viewed the industry's historically complex, opaque and inefficient payment processes as too risky. Fortunately, technology has altered that mindset.

CHANGING THE GAME

With technology that moves payment management to the cloud, processes become efficient, standardized and transparent, helping to allay SCF funders' longstanding concerns. Construction invoices, once seen as high-risk, become fundable assets that SCF providers can be sure are free of liens and other issues.

This is a significant development in engineering and construction, where the median days sales outstanding (DSO) metric stands at 84 days—the longest among the major 17 industries studied—according to a PwC report (also known as PricewaterhouseCoopers). At the same time, regulatory and other changes to the credit and financing landscape in the wake of the 2007 through 2008 financial crisis resulted in tougher financing conditions for small- to mid-sized businesses, making working capital gaps difficult to bridge.

Recognizing the need to address these challenges for subcontractors, a number of general contractors have recently launched SCF programs, leveraging technology to ensure that participating subcontractors are paid sooner and at a predictable time.

Proponents of SCF cite various potential benefits for supplier organizations, including greatly reduced roadblocks in cash flow, lower cost access to working capital, strengthened balance sheets and ability to fund growth. Buyer organizations benefit from increased stability in their supply chain, among other improvements.

Given the ongoing challenges arising from tight margins and financial risks, construction industry participants would do well to weigh the benefits of utilizing new, technology-enabled programs to improve working capital management, allowing them to prosper while they focus on delivering value in their projects. CBO

Mike Antis is vice president of the client services, construction and engineering global business unit at Oracle. Prior to Oracle, Antis spent more than 11 years at Textura in various executive positions in both the United States and the Middle East, most recently as executive vice president of client services. Visit oracle.com.





Circle 101 on card.

WATCH THIS

How contractors are making the most of video & using YouTube for smarter online marketing

By Joe Dysart



For years now, video has been a leading marketing strategy for small businesses—a cost- and time-efficient way to get the word out—and for much larger Fortune 500 companies, carrying their message in "viral" efficacy across the globe.

If you're looking for an inexpensive way to market your construction business through video, complete with analytics, YouTube has an enticing offer: They'll do it for free. In a move to remain the de facto platform for video on the web, the company has rolled out a series of free tools that enables any construction business to edit, post and analyze viewership of marketing videos at absolutely no cost.

David Coyne, copywriter, marketing consultant and founder of David Coyne Communications (b2bcopywriter.net) said, "Conversion rates (increased sales) tend to improve when sites include video."

Michael Miller, author of YouTube for Business, noted, "If you've never visited youtube.com, you've missed out on the hottest thing on the internet today."

Moreover, some of the most successful videos on YouTube are those made with consumer-grade video equipment and shot by construction business owners or their staff—people who are simply looking to offer consumers a glimpse of what it's like to do business with their construction company.

Some of the most successful videos on YouTube are those made with consumer-grade video equipment & shot by construction business owners or their staff—people who are simply looking to offer consumers a glimpse of what it's like to do business with their construction company.

GETTING STARTED

"For less than $200, you can buy The Flip handheld camera to use on the jobsite," said Darren Slaughter, owner of a digital marketing agency specializing in the construction industry (darrenslaughter.com). "The Flip camera provides good-quality videos that can be directly uploaded to YouTube."

Spencer Powell, president of Builder Funnel (builderfunnel.com), a digital marketing agency that also specializes in the construction industry, assured, "You don't have to be Martin Scorsese in order to use video effectively."

Probably the best aspect of marketing with YouTube is that it's absolutely free. Essentially, YouTube allows any business or organization to post marketing videos on its site, no fees included. YouTube also makes it easy for even the most novice of users to begin video marketing. The first stop for beginners is YouTube Creator's Hub (youtubecreatorshub.com), where new users can learn the basics of how to set up an account, find inspiration and shoot their first video.

EDITING & PLAYERS

You can also find links to editing tools on YouTube that help you polish raw footage and get tips from seasoned users on how to optimize your video on sites, such as:

- Google Support for YouTube (support.google.com/youtube)
- YouTube Help Forum (productforums.google.com/forum/#!forum/youtube)

If you're looking to get more sophisticated with your video editing, look to the following standalone, purchasable tools:

- Video Studio Pro Ultimate (videostudiopro.com/en/products/videostudio/ultimate)
- Pinnacle Studio 16 Ultimate (pinnaclesys.com/en/products/studio/ultimate)
- Adobe Premiere Pro (adobe.com/products/premiere)

Once your video is on YouTube, the free service also offers an embeddable video player, which enables you to publish your marketing video directly on your website. Essentially, the YouTube player embeds a small screen that visitors can click on to view the marketing videos you've posted about your construction business. For quick instructions on embedding a YouTube viewer, visit support.google.com/youtube/answer/171780?hl=en.

Embedding the player involves little more than dropping a snippet of code onto a webpage. YouTube does the rest. Plus, the player—which is also free—can be placed in other locations online, such as adjacent to your company's blog, on your social network websites and/or virtually any other web-based platform.

When dropping in the player, you'll have the option to post it to your site "as is," with its familiar chrome border and YouTube logo. Or, you or your web designer can customize the player with its own "skin."

The customized look can feature your construction business's logo, as well as a look and feel that is distinctive and specialized for your company. With both options, a faint YouTube watermark appears in the right-hand corner of your video. For an informative video on how to customize your player's skin, check out youtube.com/watch?v=uTwWEtVtu580.

The player creation tool also enables you to optimize your marketing video for search engines by allowing the inclusion of titles, descriptions, ratings and viewer comments associated with your video. But, the real beauty of the player is that the technology enables you to offer a window to your business's videos on your own website, while shifting the hosting and transmission costs associated with the viewing of that video to YouTube.

How does this work? While the player is embedded on your site, the actual videos still reside on YouTube's computer servers. That means every time someone views your video, it's YouTube's computer servers that are transmitting the video, not your computer servers. It's a scenario especially ideal for construction business owners who are interested in reaching out to online viewers with a number of offerings but have little or no budget to do so. Plus, it's also an excellent insurance policy for any construction business website that happens to produce a "viral" video—one that becomes an overnight sensation, viewed by hundreds of thousands or even millions of viewers.

For most small- and medium-sized construction businesses, the onslaught of that kind of massive downloading generally results in a crashed company site and countless missed sales and/or public relations opportunities. For YouTube, it's nearly an everyday event that the web goliath has learned to easily accommodate.

ANALYTICS & SEO

Once you've optimized your videos for Google, you'll also be able to continually analyze how your videos are performing with another free tool, YouTube Analytics (support.google.com/youtube/answer/1714323). Essentially, Analytics is a service that offers a detailed map of where your views are coming from. It also reveals how people are discovering your videos by uncovering the search terms they entered, leading them to your website. Plus, you'll be able to discern the age and gender of your audience, how many times viewers rate or comment on your videos and more.

LIGHTS, CAMERA, ACTION

Not sure what to video? Meet with your team to brainstorm a few ideas that make the most sense for your company, construction specialty and viewer audience. A good place to begin is with a corporate culture video highlighting your company's leadership, teams and mission statement. Some other options might include:

- Customer testimonials
- Interviews with team leaders and/or clients
- Behind-the-scenes footage
- Vlogs (video blogs)
- Events/announcements
- Case studies/project overviews
- Time-lapse footage
- Product reviews
- Demolition projects
- Training videos
- Drone and security camera footage
- Jobsite safety tips
- How-to videos or tutorials



Circle 121 on card.

NOT CAMERA READY?

If your business isn't equipped to take on the task of producing and sharing its own video content right now, don't worry. Professional services can handle every aspect of video production for you, bringing your message to life with engaging videos that reach, inform and entertain your audience. According to One Market Media (onemarketmedia.com), on average, most production companies charge between $75 and $150 an hour for the people involved in key activities, such as shooting, editing and directing corporate videos. In addition to primarily filming the footage, services sometimes include help crafting a script; tips for refining audio; enhanced video editing techniques to provide special effects and closed captions; and content packaging options with your company's branding.

You can get the most out of those analytics by optimizing your videos for the Google search engine. "Google favors sites with relevant, timely content," says Cyndie Shaffstall, founder of (spidertrainers.com), an online marketing firm. For tips on how to optimize, simply Google "search engine optimization (SEO) YouTube videos."

"One of YouTube's strongest selling points is the SEO possibility," said Powell of Builder Funnel. "Choose your keywords carefully, and your video could appear on the first page of Google search."

The bottom line is whether you're looking to experiment with web video creation and embedding for the first time, or you're an experienced user looking to cut costs while increasing the sophistication of your video marketing strategy, YouTube is a free solution that is tough to beat for do-it-yourself video sharing.

Of course, if you're looking to find other free video sharing sites where you can post your business's marketing videos, you'll want to check out sites like:

- vimeo.com
- metacafe.com
- vevo.com
- dailymotion.com
- flickr.com

Joe Dysart is a speaker and business consultant based in New York City. Contact Dysart at 646-233-4089 or joe@joedysart.com. Visit joedysart.com.



BUILDING SOLUTIONS... For builders and contractors

Our interest is always your best interest. We provide decades of experience and expertise, constantly educating ourselves on your market environment, we also take pride in our loyalty and value our credibility. You can depend on us to work for you. Because we're not just reliable, we're dedicated. And we never compete against our builder partners. Varco Pruden offers superior products and service, including:

- Custom engineered and conventional steel designs
- Regional manufacturing proximity
- Cutting-edge technology and material management apps
- Unequaled marketing tools and resources
- Experienced project management and field support

Contact Varco Pruden today. Let us show you how, together, we can add value to your business and your reputation.



BUILDING SOLUTIONS
...one relationship at a time

Visit **www.VP.com/ad/CBO** to receive this free brochure "Built on a Tradition of Excellence."

Circle 120 on card.



Why Email Is Still a Top Marketing Strategy

6 keys to communicating effectively & efficiently

By Neil Brown

Contrary to popular belief, email is still one of the most effective marketing channels. Why? Because email can reach individual decision-makers at a relatively low cost in comparison to many other marketing channels. Email can be measured easily and can drive lead generation. In fact, email is growing steadily. A recent McKinsey study (mckinsey.com) found email to be 40 times more effective than Facebook and Twitter combined; however, it must be executed correctly to achieve these results. This is no small matter, as there are many variables to reaching optimum email excellence. The following checklist identifies the key variables that determine email effectiveness and success.

1. START WITH THE EMAIL LIST

The quality of an email list most often refers to its deliverability or conversion rates. Lists with a high percentage of undeliverable emails, or hard bounces (returned to sender), can often be blocked as spam or even blacklisted. Therefore, list quality is often a reference to how recent the emails were opted-in or procured. Old lists will have a high percentage of expired emails, which results in hard bounces. Fortunately, most email service providers (ESPs) and customer relationship management platforms (CRMs) automatically remove hard bounces. In addition, there are a variety of tools that can verify email deliverability.

List building should be an ongoing effort, with opt-ins or requested emails being the foundation. Other sources for list prospects include customers, employees, trade-show attendees, list brokers and more. While the United States is lenient about email, Europe and Canada are not. In May 2018, the European Union began enforcing The General Data Protection Regulation (GDPR), which regulates the collection and processing of personal information of individuals, especially in regard to websites and email lists. For vendors, customers and employees, collect only data that you need and will use. Overcollection of information, especially personally-identifying data, might get you into trouble later. Care must be taken when building a list and allowing recipients to unsubscribe to emails. With average open rates of 10 to 20 percent, lists should be as large as possible to ensure engagement.

2. IMPROVE OPEN RATES USING SUBJECT LINES

Your email subject line is the determining factor for open rates. In fact, 47 percent of email recipients say the subject line determines whether or not they will open it (hubspot.com). There are many tips and techniques to ensure subject lines are optimized for maximum open rates. The following is a list of tips for subject lines.

- Keep subject lines brief—preferably, less than 15 characters. Subject lines should never be more than 25 characters.
- Use words and phrases that convey a sense of urgency, such as "Today," "Special Offer" or "Open Now."
- Avoid words and phrases that are spam flags, such as "Get Rich Quick" and "Multilevel Marketing."
- Avoid writing in all caps and using special characters.
- Personalize the subject line with the recipient or company name.
- Test and optimize your potential subject lines. Use a free tool like the one offered at subjectlines.com.

3. DRIVE ENGAGEMENT THROUGH EMAIL DESIGN

Once the recipient opens the email, it is up to the design to drive engagement. Design includes copy, images and calls to action (CTAs). Broadly, designs can be single topic or multitopic. An example of a single-topic email is a webcast announcement with a description, bullet points and a registration link. An example of a multitopic email design is a newsletter, with a couple of different topics covered in one to two sentences and a "read more" link. In addition, there might be an event registration, hyperlinked social media icons, a cover of a brochure and/or a hyperlinked e-book.

The key to effective email design is short copy, with clear CTAs that can be measured using metrics. One of the great things about email is that designs and CTAs can be tested and optimized. How? Often called A/B tests, two email design variations are mailed to smaller lists, with click-through rates (CTRs) measured. The higher CTR is then used for the balance of the list.

4. USE AN EMAIL PLATFORM

There are many platform options, but which one is best? The most basic is an email service provider (ESP). Examples include Constant Contact and MailChimp. An ESP is most often the entry-level email system for small lists. Most ESPs have a relatively inexpensive monthly fee and offer delivery optimization, metrics dashboards and auto-removal of hard bounces. Customer relationship management software (CRM) is a more robust system, with complete email functionality and more advanced features like integration with e-commerce and other systems. Some examples include Salesforce and Microsoft Dynamics.

Marketing automation software or systems (MAS) may be similar to CRM but have other marketing features like website and blog management or advanced metrics and dashboards. Examples include Marketo and Hubspot. Of course, software can be more expensive than a basic email service, but it might be required for larger enterprises. Selection of an email distribution system, therefore, is based on list size, functionality required and cost. The above options optimize for effective deliverability, reducing the possibility of spam blocking and being blacklisted—options not available through personal email.

5. UNDERSTAND EMAIL METRICS

All of the aforementioned ESP, CRM and MAS platforms have easy-to-use dashboards with metrics that are measured for each email campaign. Consider the following key email metrics and what they mean to your email marketing operations.

- *Open rate*—The percentage of recipients that open an email; 10 to 20 percent is average.
- *Click-through rate (CTR)*—The percentage of recipients clicking links within an email. CTRs vary by industry, but in general, 10 percent and above is positive.
- *Bounce rate*—The percentage of emails that have been sent back to the sender, as the recipient email address was invalid or presently not working. Hard bounces are bad email addresses and should be removed. Soft bounces are most often out-of-office notifications or the result of temporary server issues.
- *Unsubscribe rate*—The percentage of the list that unsubscribes through the link at the bottom of each email, which allows visitors to unsubscribe or modify/update their information.

6. PAY ATTENTION & LEARN TO ADAPT

Email is not perfect. Because average open rates are 10 to 20 percent, 80 to 90 percent of your intended audience will not see the email. Overcome this issue by building larger lists and optimizing subject lines to improve open rates. Additionally, remember that under GDPR, there are stringent laws and steep fines for emails that are not opt-in or requested by the recipient. As such, make sure to stay on top of your email list and base your recipients on direct requests and opt-ins.

Email continues to remain a major marketing element. It takes effort in multiple areas to run a successful email campaign, and a large, verified email list is the foundation. An optimized subject line drives opens, and a simple email design with strong offers or CTAs drives engagement. With email, measurement of key metrics, testing and optimization is possible. Of course, email drives website traffic, among other benefits, including ease of use and the mobility of the medium, cutting across age and gender boundaries with its broad use and popularity. CBO

Neil Brown is chairman of the Construction Marketing Association (CMA). Brown is a speaker and author of "Tools of the Trade: Modern Marketing for Construction Brands". Contact Brown at 630-868-5061. The CMA provides professional training, resources, networking and recognition to marketers in the construction industry. Visit constructionmarketingassociation.org.





The Future of the Phone Call

The new blueprint for boosting business with incoming calls

By Christina Burns

People have more ways than ever to connect—social media, virtual meetings, online chat rooms, texting, email, etc.—and with smartphones at our fingertips, we can stay tuned in to the web anytime, anywhere. The question then becomes: How do all of these methods of communication impact customer preferences and expectations? Surprisingly, the preferred method for clients to interact with businesses remains the phone call. Companies of all sizes are seeing an explosion of inbound calls. According to the call intelligence company, Invoca, a predicted 162 billion calls will be made to businesses from smartphones in 2019. A significant reason for this spike is the tremendous growth of mobile search and click-to-call options. With this functionality, smartphone users can search for, find and call a business in seconds with just a few screen taps.

THE DOWNSIDE

While an increase in phone calls could be good for business, answering the phone isn't always possible or the best use of your time as a business owner. Missed calls are missed opportunities. According to call handling and telephone directing company, Message Direct, 85 percent of people who call and get no answer will not call back, and consumer reports show that 72 percent of callers who reach an automated answer will hang up without leaving a message (and perhaps call a competitor).

Even if you can answer the phone, it takes an average of 23 minutes and 15 seconds to get back to the task at hand after being interrupted. Answering spam calls alone wasted nearly 20 million hours for small businesses in 2014, which translated to about $475 million annually and is only increasing with call volume, says a study by the University of California, Irvine. Increased call volume means increased distraction, and, since the typical contractor is conducting business from jobsites or on the road, this can be a challenging reality.

THE UPSIDE

Still, the rise of the phone call creates great opportunities for contractors to nurture new and existing relationships, creating happy clients who will drive positive referrals and repeat business. To capitalize on this trend, it's important that every incoming call is handled proficiently.

Consider it part of a productive marketing channel. A call is an invitation to clearly communicate the value of the service you provide. Every call is your chance to demonstrate dedication to providing a great experience, building rapport and trust. Other marketing channels, such as direct mail, social media, email marketing and advertisements can bring in the phone call, but then, it's even more important to close the loop and win the business. After all, inbound phone calls are 10 to 15 times more likely to convert to a sale than inbound website leads, says Hubspot's marketing experts.

MAKE IT RING

How can you make the most of the click-to-call boom and drive more traffic to your phone while still remaining productive? The following list will help you prepare for every call, and answer each call expertly.

- *Look good to Google*—Most clients will come through mobile search using Google, so confirm that your Google business information is up-to-date, with a phone number connected to the profile. This ensures potential customers will be able to call your business directly from the call icon.
- *Make your website phone-friendly*—For those potential customers who click through to your website instead of your Google profile, it's essential to have your phone number prominently displayed on your website in areas such as the header, footer, contact page and in any calls-to-action. In addition to listing your phone number, a simple line of code is all it takes to make your phone number clickable from a mobile phone.
- *Find your voice*—A phone call is an efficient, cost-effective opportunity to make a great first impression. Don't lose your callers after making all that effort to get the phone to ring. Start every customer experience right by knowing what you'll say and how you'll say it.
- *Measure twice, cut once*—With some simple preparation, you can ensure a consistent and positive experience for every caller. This requires asking the right questions to better understand why they're calling in the first place and how you'll solve their problem.

Smartphone users typically reach for one or more of these reasons:

1. *To get a quick answer*—These callers aren't interested in waiting a week or more for a response. They're looking to click, call and get to the bottom of things quickly (e.g., service, pricing, hours, etc.).
2. *To express a concern*—They are calling to voice their thoughts and want to talk to a live person now, not later.
3. *To get expert advice*—Callers are seeking guidance from the professionals and want to speak directly with you.



Circle 102 on card.

What do these three reasons have in common? They all require a real person to answer the phone. To meet the expectations of these callers (whether existing or potential customers), you need a friendly voice on your end of the line during business hours—a voice to consistently welcome callers and build trust.

THE RIGHT TOOLKIT FOR THE JOB

Consider building a phrasing toolkit for your business that will help ensure a consistent experience for callers. Your exchanges with callers may be brief, so every word matters. Use positive phrasing to establish rapport and inspire connection-making conversations. Your toolkit should address the basics about your business, handling curveballs and using your voice effectively in situations, such as the following:

- Mobile callers are likely to have a lot of basic questions. Having a concise description of your company and some FAQs on hand can be extremely helpful for you and your team.
- Prepare for curveballs by keeping an upbeat, go-to reply on the tip of your tongue. Something like, "Great question! I'll be happy to find out," will help prevent backing yourself into a conversational corner and continue guiding callers through a positive experience.
- Prepare to make the most of your time with someone when they call. When your voice is your only tool, your tone and pace are as important as your word choice. In general, it's best to listen and follow your caller's lead. Engage with talkative callers; get down to business with tight-lipped callers; pick up the pace for fast-talking callers; and pour on the service to callers who sound upset.

BENEFITS ABOUND

The popularity of mobile search poses a big opportunity for construction business owners. Thanks to smartphones, the very minute a potential customer conjures up a need, they can find a company that meets it. When you can accommodate the click-to-call inquiries with a friendly voice eager to offer assistance, you're better equipped to reap the benefits of the inbound call boom and see the results of investing in positive experiences for every caller and potential client. CBO

Christina Burns is the vice president of customer success at Ruby Receptionists and a customer experience leader. Her blog shares insights and best practices for others in the field and those who want to up their customer service game. Burns has been in the industry for over a decade and has a passion for helping businesses focus on customer experience as a key business metric. Visit callruby.com.





Circle 119 on card.

Taking the Road Less Traveled

6 reasons ADTs are a versatile solution for off-highway hauling

BY AARON KLEINGARTNER

When it comes to off-highway hauling, there are two types of trucks available to help move material from one location to another—articulated dump trucks (ADTs) and rigid frame trucks. Although they both have massive hauling capabilities, an ADT's design offers several off-road performance advantages in comparison with rigid frame trucks, especially in earthmoving and hauling applications.

Since an ADT's simple, yet effective, design can be very different from other pieces of hauling equipment, it's important that the truck is compatible with the specific tasks it's needed to perform. Keep in mind that if the tasks you will be completing are routine and regular, it may be best to purchase an ADT. However, if the tasks are performed only periodically, you may decide to rent one as needed. ADTs can be a versatile solution for off-highway hauling, helping you increase machine profitability and jobsite productivity. Before renting an ADT, take a look at the following tips.



1. JOBSITE CONDITIONS

ADTs are commonly found on jobsites in the early phases of site development, typically when ground conditions are not ideal. Unlike rigid frame trucks, ADTs are designed to quickly move large amounts of material (e.g., dirt, rock, sand and gravel) in soft, wet or adverse ground conditions.

Because they are designed to operate in conditions that limit rigid frame trucks, ADTs can increase productivity and uptime. For example, they have an articulation joint, which distributes weight equally during maximum turning. In addition, they are equipped with a semi-independent front suspension, which enables free movement of one side, keeping the front wheels in contact with the ground for better traction and shock absorption.

Some ADTs have front- and rear-limited slip differentials, as well as an inter-axle differential, to improve truck performance by splitting power—one-third to the front and two-thirds to the rear. A front-mounted turning ring and rear tandem bogie are two ADT features—a design feature for some brands—that maintain maximum traction and stability when traveling over unusually rough or soft terrain.

The right tires contribute significantly to an ADT's tractive force, which is determined by the tread design, remaining tread life and tire inflation. Jobsite ground conditions

are also a factor. The most common tires for ADTs are radial E3 or E4 tires; however, E3 tires offer better traction for sites that have soft soil conditions. Individual tire manufacturers can inform you and your operators about which rubber compounds will provide longer machine life for earthmoving and hauling applications.

2. PRODUCTIVITY LEVEL & MACHINE SIZE

As an equipment owner, your primary goal is to maximize productivity by reducing haul cycles. An ADT should have a good power-to-weight ratio along with an abundance of horsepower and torque to help your operators haul more and travel faster during a single cycle.

One of the best ways to maximize productivity when reducing haul cycles is to match your ADT with the proper loading equipment, such as an excavator or wheel loader, so your equipment operators do not have to wait long between loads. For example, if your jobsite calls for short hauls and you own a mid-size crawler excavator, consider renting a 30-ton ADT. If you need to move larger volumes over long distances, a larger excavator paired with a 40-ton ADT could likely fit your requirements. If you do not have the corresponding loading equipment, your dealership may have the right size wheel loader or excavator in their rental fleet. It typically takes four to six passes to fill an ADT for most material hauling tasks on sites with good production.

3. SERVICEABILITY

Before renting an ADT, make sure to ask about serviceability, especially ease of access to the transmission and engine compartment on all sides. Like any piece of construction equipment, proper, scheduled maintenance will extend the life of the



machine and save you money over time. In addition to completing a daily walk-around, perform the following three preventive maintenance procedures:

- If an auto-lubrication system is installed, inspect it to ensure that there is no premature component failure due to lack of grease.
- Assess tire air pressure, wear and damage to mitigate major repair risk.
- Monitor engine temperature and

BROWN BRONTOSAURUS MOWING DIV.

JOHN BROWN & SONS

Cut & Mulch brush & Small Trees in One Operation!
Built to Heavy Construction/Forestry Standards for Long Tool Life and Heavy Duty Use!

Can be quickly converted from brush cutting to other functions & attachments.



- Low, Low Maintenance & Even Lower Downtime — 95%-98% Utilization
- Designed & Manufactured by a Clearing Contractor: Operating a Fleet of Units
- Environmentally Friendly with an Extra Light Footprint
- Perfect for: Right of Way Maintenance (R.O.W.), Department of Transportation (D.O.T.), Road Maintenance, Land Clearing, Railroads & Forest Management

John C. Brown & Sons
14 B & B Lane, Weare, NH 03104
Toll Free: 888-227-6686
www.brownbronto.com • carter@brownbronto.com

Why consider dee® cold rolled steel nail stakes over competitors steel or wood nail stakes?

Because buying INEXPENSIVE today can mean MORE EXPEN$IVE tomorrow...

Are you throwing stakes away that no longer fit your forms because of bending or mushrooming? Call us today and learn more about dee Concrete Stakes. We can be the difference between buying inexpensive now, or more profits in the future!

dee cold rolled steel nail stakes vs. competitors steel or wood nail stakes ?



average life of more than 200 uses

dee features:	compare your brand: Yes	No
American steel	☐	☐
Made in America	☐	☐
Machined point	☐	☐
Long lasting	☐	☐
Won't bend	☐	☐
Won't mushroom	☐	☐
Won't split	☐	☐

dee® Manufactured by: CONCRETE ACCESSORIES II Division of Tesko Enterprises

7350 W. Montrose Ave. Norridge, IL 60706
708/452/0250 800/245/1333 Fax 708/452/7220
www.deeconcrete.com

Circle 104 on card.

revolutions per minute (rpm) history with telematics to prevent engine damage and premature repairs.

Educated and dependable product support is critical for construction equipment. Make sure to choose a dealer that offers product specialization, trained mechanics and timely response times, and keeps premium parts in stock.

4. OPTIONS & ACCESSORIES

An ADT can be equipped with multiple options and accessories to help increase its potential. Tailgates, for example, help to minimize spillage from the truck's dump body and improve productivity. In addition, a heated body kit is also important, especially in colder climates, because it helps divert the engine exhaust through channels in the dump body, keeping materials from freezing. Cold-weather starting kits and heated rear mirrors are other useful options for ADT operators working in the northern United States and Canada.

5. SAFETY FEATURES

Understanding the machine's safety features is another important consideration before selecting an ADT. Proper location of the turning ring, or oscillating joint, allows for equal weight distribution between the front tires when the machine is loaded and turning. Unequal weight distribution can lead to instability.

In addition, some ADT manufacturers have addressed compromised sight lines with rear sloping frames, lowering the center of gravity for more equal weight distribution and improved stability when fully loaded. The frames improve tractive effort, minimize tire wear and lower ground-bearing pressure as well.

Large, well-placed and properly adjusted rearview mirrors give a continuous view of the rear wheels while the operator is backing up, providing a higher degree of safety on the jobsite. In addition, some ADTs are equipped with a rear camera.

6. FLEET-TRACKING TECHNOLOGIES

Today's ADTs can be equipped with onboard fleet tracking technologies, such as telematics, to track and report data in real time. Telematics systems provide you with a better understanding of how, when and where your construction equipment is being used. The location is provided in longitude and latitude, and the mapping software automatically changes to the closest address.

In addition to tracking the physical machine location, many equipment manufacturers offer a geofence, or time fence feature, to help owners and fleet managers monitor unscheduled use and track machines in the event of theft or vandalism. With a geofence, you can set virtual GPS boundaries, and if a machine moves outside of the boundary, you are notified via email or text message.

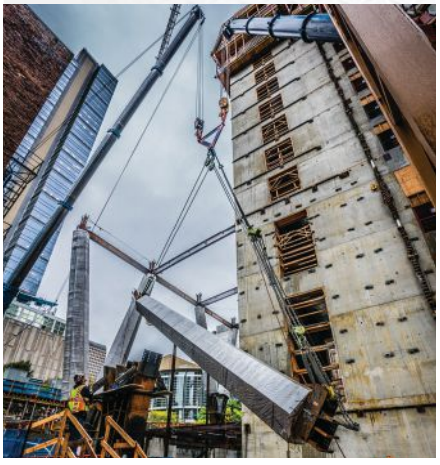
Many fleet tracking technologies use a terminal that is installed on the machine to gather and communicate data wirelessly via cellular or satellite service. The machine's data is then sent to a website, where you, your operators and your equipment dealer can monitor the machine's performance, operating hours, fuel usage, engine idle time and work time. You can also monitor engine and hydraulic oil temperature, as well as fault and warning codes via computer or cellular device.

By taking the time to ask the necessary questions, you can better select the appropriate ADT and available features that best meet your jobsite needs and conditions. CBO

Aaron Kleingartner is the marketing manager for Doosan Infracore North America LLC, headquartered in Suwanee, Georgia. Kleingartner has 15 years of product development, analytics and strategic marketing experience with Doosan. Visit doosanequipment.com.



GREAT SITES DESERVE GREAT GEAR
LIFTING EQUIPMENT RENTAL SPECIALISTS



RENT
HOISTING, RIGGING, JACKING, PULLING, MATERIAL HANDLING & SAFETY GEAR



• Atlanta • Charlotte • Chicago • Columbus • Dallas • Denver • Detroit • Green Bay • Houston • Kansas City • Los Angeles • Minneapolis • Nashville • New Orleans • New York City • Philadelphia • Phoenix • Pittsburgh • San Francisco • Seattle • St. Louis • Tampa • Toronto

(800) 878-7305
www.RentLGH.com/CBO
Rentals@RentLGH.com

Lifting Gear Hire
Lifting Equipment Rental Specialists

Circle 112 on card.

Building a Database of Tire-Maintenance Information

How tracking data can identify hidden opportunities & forecast needs

BY ERIC MATSON

Tires are complex, highly engineered products that can be important contributors to construction equipment productivity. They also account for a substantial capital investment. That's why it makes sense to do everything you can to ensure that you are using the right tires for your application and that they are performing correctly. Building a database of tire maintenance information is one of the best ways to accomplish this.



There are many specific tire performance metrics you should track, starting with inflation levels. Maintaining proper inflation is one of the most effective things you can do to achieve optimal tire performance. Consistent, correct inflation positively impacts tire wear and casing life, as well as overall performance. It also reduces the amount of fuel the machine consumes. Inflation evaluations should be part of your pre-shift equipment checklist.

Second, it is important to check tread wear. This includes checking tread depth level and examining patterns for signs of unusual or uneven wear and for nicks or cuts that could grow into larger, deeper separations if left unaddressed.

Third, look for mismatched tires. Sometimes, construction companies will unknowingly mount tires that feature two different diameters, which can have a detrimental impact on both equipment and tire performance over time. Take the initiative to make sure that yours are identical in measurement.

Finally, to effectively utilize this information, all captured tire data should be entered into a tire-maintenance database system, such as an off-the-road (OTR) tire performance monitoring program. Systems like these automatically collect tire data via a scanning tool and upload the information to a password-protected, cloud-based portal. As information is accumulated over time, a more accurate picture of the performance of your tires will emerge. Building a database of tire maintenance can help you:

- *Identify overlooked or hidden maintenance opportunities*—Let's say that over the course of several fleet surveys, you discover that a tire on a certain wheel is exhibiting non-traditional wear patterns. This could indicate that a tire was not properly inflated or the presence of a condition that is causing the tire to lose air.

A tire-management database can help you keep tabs on this critical dynamic & put valuable information in your hands so you can make faster, more educated decisions about your investment.

Under-inflation can cause tires to wear unevenly and/or prematurely. Knowing this, you can perform a closer inspection of the tire, rim or complete wheel assembly, and depending upon the results, take corrective action. Gaining a better handle on tire performance also can help you evaluate, and, if needed, adjust fleet survey and site audit procedures and frequency.

It's important to remember that tire performance can be influenced by underfoot and other environmental conditions, some of which, like the presence of rocks or standing water, can be mitigated.

- *Make sure you've selected the most appropriate tire for your application*—Good tire performance starts with good tire selection, and the needs of individual machines can differ greatly. For example, equipment that travels across jagged, debris-strewn surfaces might require a tire that primarily offers enhanced cut resistance. A machine that rolls across even, hard-packed terrain might need a tire that offers more service hours, while placing less of a premium on cut or impact resistance. When choosing new tires or evaluating the tires that are already on your machines, consult with your local OTR tire dealer or expert. The right professional is one who has the experience and knowledge to evaluate your tire needs and jobsite conditions, allowing them to identify tires that can provide the lowest overall cost of ownership.
- *Forecast future tire needs more accurately*—Maintaining a database of tire-maintenance information helps you monitor the hours that a tire has been in service and more accurately predict when it might need to be replaced. In turn, this can help you manage your tire budget more effectively, with the goal of ultimately lowering your overall operating cost.



When tracking tire performance, also note when a tire has been taken out of service or replaced, not forgetting to analyze removed tires. The information gathered through a careful, systematic scrap tire analysis can be used to improve your tire maintenance procedures.

Equipment operating conditions are always in flux, and service requirements sometimes change. Tracking tire performance takes vigilance, dedication and time. But, whether you are launching a new tire management program or simply tweaking an existing program, the results of effective construction tire maintenance—in terms of both improved performance and reduced costs—more than make up for the time and effort involved.

It's hard to track how your tire assets are performing without a scorecard of some kind. A tire-management database can help you keep tabs on this critical dynamic and put valuable information in your hands so you can make faster, more educated decisions about your investment. **CBO**

OTR tire veteran Eric Matson is the global field engineering manager for The Goodyear Tire & Rubber Company's OTR tire business. Visit goodyearotr.com.



New Action for Auctions

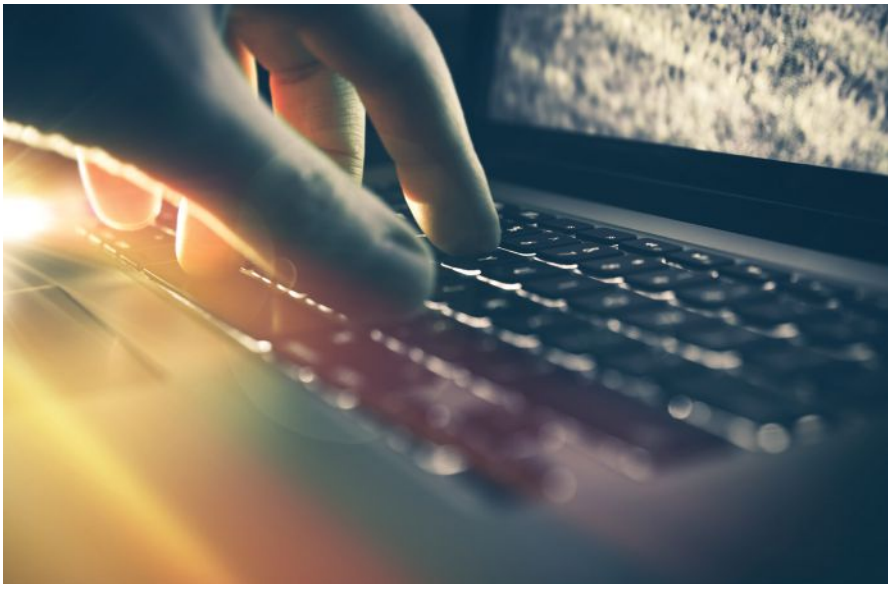
A look at the new mentality making online auctions successful

BY HOWARD HAWK

The internet has revolutionized the way we buy and sell. Many purchases that used to demand in-person transactions have evolved—and improved—into virtual services. Wasted time and travel results in wasted expenses and increased opportunity costs. The internet has brought immediacy, efficiency and greater selection to many traditional markets and new alternatives to the equipment remarketing and auctioning world.

In the traditional, live-auction model, there are significant costs for both sellers and buyers just to participate. Sellers have to pay in time and expense, shipping items to an auction site in time to make the catalog. Since bidders must be on-site to effectively inspect equipment, they have to travel, sacrificing time, energy and the money to get there in hopes of sourcing equipment. A huge opportunity cost also lies in being pulled away from their critical business activities.

In reaction to these inconveniences, savvy equipment buyers and sellers have turned to the power of the internet and the efficiency gains of online auctions.



SHIFTING TO THE NEW MENTALITY

Much like the traditional used car business transitioning from a dimly-lit buyer experience to certified, pre-owned options at many professional dealerships, the auction business is moving from a "buyer beware" mentality to a more transparent, "buyer aware" model. With traditional auctions, the approach of the marketplace was "enter at buyer's risk," so to speak. This made for an uncomfortable buyer experience and a nontransparent selling process, in which the marketplace did not promote disclosure of valued information. This approach promoted sellers withholding information they did not want to fully disclose, which necessitated buyers spending tremendous amounts of time inspecting equipment and trying to discover its true condition, hoping to bid accordingly.

Most online auction companies understand that bidders need to have accurate information before they can place meaningful, informed bids. Consequently, some are taking most of the guesswork out of the process and providing much more detailed information so that potential buyers don't always have to inspect the equipment prior to bidding.

However, the option is often still available, giving the buyer the best of both worlds. This saves both time and money for prospective equipment buyers and helps create a shift in mentality away from uncertainty and toward understanding.

FINDING ACCEPTANCE

In the past, while people felt it was safe to buy a pair of shoes or a camera online, there was much skepticism about buying a large, complex piece of construction equipment in the same way. Buyers were distrustful of the listed seller credentials and machine condition, scared of payment fraud, and unsure of what would happen if something went wrong.

The transition to buying higher-valued construction and industrial equipment online took some time. While people would watch online auctions, they still preferred to go visit a dealer, having more confidence buying from a live-auction site after previewing the equipment in person. However, over the past 10 years, online bidding and buying activity for construction equipment has increased significantly. For many large traditional auctions, the online buying has gone from accounting for less than 10 percent to over 50 percent of the activity. For some companies, online auction acceptance has grown quickly enough to outpace traditional auctions.

Today, internet research, bidding and buying is a standard part of the construction equipment industry. Trusted sellers have emerged; safe payment systems have evolved; internet speeds, accessibility and mobile devices have dramatically improved; and a greater amount of transparent condition information is now provided to online buyers. Safe buying resolution processes have been developed for instances in which there is a discrepancy of provided information. Some companies even provide full sound and motion video productions of almost every machine up for auction, greatly increasing the value of information provided to buyers.

Given the evolved trust and comfort level of internet auction activity, price points have also normalized. Before the recent acceptance of online auction buying, price realization for more expensive items was often higher at live auctions than traditional ones. However, over the last 10 years, and especially during the past 3 to 5 years, auction prices have normalized. Due to the efficiencies of online models, sellers are now able to achieve higher net returns in many equipment categories, and buyers are still getting fair value.

GOING GLOBAL

Much of the used equipment market relies on international buyers, as the natural flow of capital assets and older construction equipment is often to overseas markets. For example, Africa has a large base of buyers for older Mack Trucks; Malaysia buys a substantial amount of two-wheel drive Case backhoes; older Caterpillar equipment finds good buyers in the Middle East and Latin America, which do not have the same ownership, maintenance and regulatory costs that exist in North America. Therefore, for optimal price performance and market dynamics, effective auctions should have strong international buyer participation.

Before the internet, traveling to large, live-auction sites around the world was about the only way to participate in the global equipment auction market. Now, with so much used and auction equipment available online, one can only imagine the costs and inefficiencies of having to travel rather than bidding online from a device. The key, of course, is a trusted platform, including an unambiguous bidding system, trusted and accurate equipment information, and a safe place for buyers to send their money long before they will ever see the equipment in person.

DOING THE RIGHT THING

Moving from a "buyer beware" to a "buyer aware" model over the internet also requires a fundamental change of philosophy in the used equipment remarketing and auction mentality.

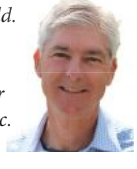
Traditionally, with the "buyer beware" philosophy of live auctions, sellers often sent distressed and problem equipment to live-auction sites without disclosing the details.

Live auctions rely on each buyer to inspect the equipment and judge for themselves the condition of the assets. For wholesale and savvy buyers, this is not a bad option. And, when buyers understand that they have to perform their own inspections, they feel it is a fair process and can then bid accordingly, knowing that many of the machines are well-worn.

The successful future of auctions lies in sellers being transparent and doing the right thing. Buyers will expect auctioneers to not stand by idly and allow known problems to go misrepresented or unreported. Auction providers will have the expectation of accurate representation from both the buyer and seller, holding both parties accountable for a fair and equitable sale. Additionally, when there are issues, customers will expect sellers and auction providers to do the right thing. Different auction providers are rolling out practices for handling disputes, ranging from arbitration or dispute handling to certification and full return training. While used (or even new) equipment is complex and of unknown condition by nature—becoming more technologically complex every day—the industry, like the used car business, is moving in the right direction.

With the growth of online auctions, more buyers (other than traditional wholesalers or savvy equipment inspectors) are participating in auctions than ever before. Technology has made it easier for both buyers and sellers to benefit. The customer expectations of truth, accuracy and execution are high and ever-increasing. Trusted providers will be the platforms of the future by changing the mentality from "buyer beware" to "buyer aware." CBO

Howard Hawk is the president of bidadoo Inc., a global online remarketing company with auction service centers across North America and bidders and buyers around the world. Bidadoo provides equipment sellers access to the world's largest online bidder and buyer base through their long-term partnership with eBay Inc. Visit bidadoo.com.



The Cost of Fatigue

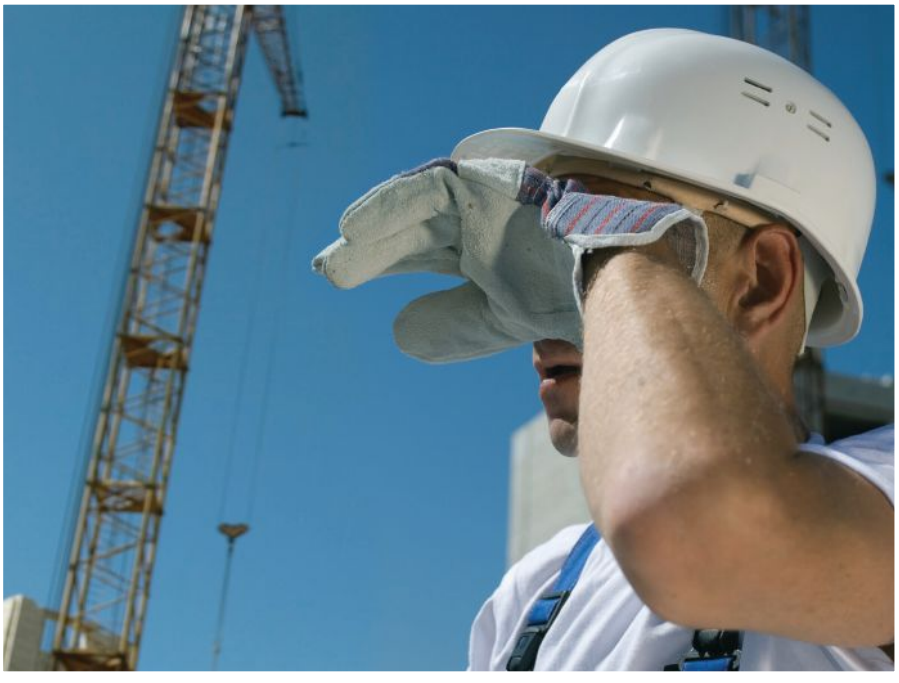
Studying the data on how you could pay the price for exhausted employees

BY JOE BALAS

Construction remains one of the most dangerous industries to work in. According to a 2016 Bureau of Labor and Statistics (BLS) report, construction led all other industries in fatal work injuries at 991—a rate of 10.1 per 100,000 full-time equivalent workers.

To protect workers from injury, the Occupational Safety and Health Administration (OSHA) levies a full scope of safety regulations, ranging from procedures to the wearing of personal protective equipment (PPE). However, when it comes to the hazard of worker fatigue, there are no codified, statutory OSHA requirements set. As a result, worker fatigue goes underreported, and no formal mitigation strategies are developed.

Many industry experts believe that worker fatigue can be easily mitigated through work scheduling methods. Still, some believe it's a condition of employment to which workers must adjust. Though there is some truth to both views, they do not account for the various hidden aspects of worker fatigue, namely its financial impact, its nature and scope, and its contributions to worker injuries.



FINANCIAL IMPACT

According to the National Safety Council (NSC), the hidden costs associated with poor sleep (worker fatigue) cost the construction industry approximately $1.8 million per year on average.

The box to the right provides the individual increases in employer costs per year, based on a construction company size of 1,000 employees and a $2,000 average annual healthcare cost per employee.

NATURE & SCOPE

In 2017, the National Safety Council (NSC) conducted a nationwide study on workplace fatigue, in which 2,010 adults working in varying industries and varying in age, gender, ethnicity and geographical location were included.

INDIVIDUAL INCREASES IN EMPLOYER COSTS PER YEAR

- Healthcare ($460)
- Work-related accidents ($846)
- Worker replacement ($862)
- Absenteeism ($475)
- Lost productivity ($8,341)

The study reported a 97-percent decreased cognitive performance in workers, showing that:

- 76 percent were tired at work
- 53 percent were less productive
- 44 percent had trouble focusing
- 39 percent had trouble remembering
- 27 percent had trouble making decisions

Along with these results, the study also revealed the percentage of respondents experiencing micro-sleeps (instances of nodding off) and where they took place.

- 41 percent off the job
- 27 percent on the job
- 16 percent on the road

The NSC results show two very critical features about the nature and scope of worker fatigue. The first is that fatigue, no matter the source (physical exertion, sleep loss or mental exertion), alters a person's ability to perform mental tasks. This is clearly evidenced by the 1,950 survey participants (97 percent) who reported various decreases in their cognitive abilities while at work. This means workers are prone to various types of mental errors, showing the hazardous nature of worker fatigue.

The second feature is micro-sleeps, or instances of nodding off. The NSC results show that fatigue is prevalent both on and off the job. Twenty-seven percent of participants reported nodding off on the job, while 41 percent reported doing so off the job, illustrating that a constant state of fatigue is present. A cause for concern is the increasing degree of a worker's fatigue when beginning a job and being on the job. This is the hazardous scope of worker fatigue.

INJURY DATA

According to OSHA, worker "fatigue is not a recordable contributor to an injury, incident or accident" and is, therefore, not considered a viable hazard. However, the best worker fatigue injury data is found in research literature.

Researchers Lombardi and Simon Folkard of the Université Paris Descartes estimated work-related annual injury incidence rates using data from the National Health Interview Survey (2004 to 2008), which investigated over 75,000 participants. In their review, it was estimated that there is an annual rise in injury incidence rates per 100 workers when workers receive less that 7 hours of sleep. See more data from this survey in Figure 1.

THE NECESSITY OF SLEEP

Sleep is a biological necessity—a time reserved for the body to perform a host of vital physical and mental maintenance functions. When both functions are fully satisfied, the body produces a physically restored and mentally alert person. When sleep is disrupted, the body responds by sending out a number of different warning signs, alerting that more sleep is needed.

The contributing factors that disturb sleep include mental or emotional stress, medications, short- or long-term medical conditions, work-induced factors (e.g., shift work, long hours or weeks) and unrestful lifestyle choices. If the proper amount and quality of sleep is not present over a period of time, the constant state of tiredness known as fatigue will result. Unfortunately, many learn to ignore these signs and continue life as normal, whether at work or at home. This is dangerous, as most of us are very poor judges of how fatigued we truly are. As a result, we are unable to determine how unsafe we may be, especially at work. The National Sleep

WARNING SIGNS

Increased	Decreased
Drowsiness	Judgement
Risk-taking	Motivation
Irritability	Reaction time
Loss of concentration	Hand-eye coordination
Withdrawal	Communication

CAUSES

- Unstimulating work environment
- Sleep deprivation
- Mental exertion
- Overtime and long work hours

CONSEQUENCES

- Cognitive degradation
- Physical degradation
- Bad mood
- Error and injury

U.S. estimates of work-related all-cause injury incidence (per 100 workers) by usual daily sleep

Usual Hours Slept / Day	Number of Workers (NHIS 2004-08)	Percent of Workers	Number of est. Work-related Injuries Annually	Number of est. Workers Annually	Est. Annual Injury Incidence per 100 Workers[1]
≤ 4.99 h	1,431	1.9	83,730	1,061,759	7.89
5 - 5.99 h	4,407	5.9	172,462	3,310,950	5.21
6 - 6.99 h	17,251	22.9	469,756	12,988,074	3.62
7 - 7.99 h	25,950	34.5	448,458	19,774,245	2.27
8 - 8.99 h	22,604	30.0	413,942	16,571,317	2.50
9 - 9.99 h	2,361	3.1	39,101	1,759,342	2.22
> 10 h	1,267	1.7	41,694	883,551	4.72
Total	75,271	100.0	1,669,142	56,349,239	2.96

[1]Includes individuals reporting employment at a job or business and those who had reported usual sleep hours.

(Source: Lombardi DA, Folkard S, Willets JL. Smith GS. Daily sleep, weekly working hours, and risk of work-related injury: US National Health Interview Survey (2004-2008). Chronobiol Int, 2010 Jul; 27(5):1013-30.

Figure 1

According to a 2016 Bureau of Labor & Statistics (BLS) report, construction led all other industries in fatal work injuries at 991—a rate of 10.1 per 100,000 full-time equivalent workers.

Foundation (NSF) recommends that adults ages 18 through 64 receive at least 7 to 9 hours of sleep per day to be fully rested and alert. Typically, we receive less than the recommended amount. In a study conducted by the Centers for Disease Control and Prevention (CDC), around 180,000 workers, representing different industries, were surveyed over a 2-year period. The results show that approximately 38 percent of workers, ages 18 to 54, receive less than the recommended 7 hours of sleep per day.

JOBSITE RISKS

Matthew Hallowell, an associate professor of construction engineering at the University of Colorado Boulder completed a literature review of the causes and outcomes of occupational fatigue. He concluded that industries at the highest risk are those where people are working long hours, overtime or many days in a row, while exposed to harsh environmental conditions, such as working in the rain or snow.

Industry veterans know that as a construction project draws closer to completion, the effort put into installing building systems on site (electricity, plumbing, HVAC, etc.) becomes more complex. Typically, this makes workers more prone to injury, as they must work with and around other tradespeople. When fatigued, the chance of injury increases as the focus shifts to completing the job, and personal safety is often ignored.

Construction sites are busy places, in which equipment, vehicles and cranes are in continual motion. To be safe in this hectic environment, workers must focus on their tasks and also be situationally aware of their surroundings. This requires a certain level of attention and awareness, especially for machine operators. When fatigued, attentiveness begins to fade or becomes channelized. As this happens, the odds of an accident or injury taking place increases.

In his dissertation, Measuring and Managing Construction Worker Fatigue, Ulises Daniel Techera ranks each of the various causes and consequences of fatigue trends detected in the construction industry. For a list of these trends, refer to page 41.



WHAT ABOUT YOU?

While it can be argued that the construction industry has made many technological advancements to improve working conditions, the human condition has not changed. Workers must still keep pace with project deadlines—working overtime within long daily shifts and workweeks—making worker fatigue a deeper and more widespread condition than most employers realize.

If you haven't already, it may be time to consider taking an innovative step in implementing a worker fatigue mitigation strategy to increase return on investment, reduce experience modification rates (EMR) and increase workplace safety. Whether you consider investing in fatigue risk management system (FRMS) software or modifying your existing risk assessment management program, your decision to address and regard worker fatigue as a viable safety hazard can be critical for your business in more ways than one. **CBO**

Joe Balas the principal consultant at Human Factors Safety, has over 20 years of experience in the medical safety, aviation safety, OSHA safety, system safety and human factors engineering fields. He served 26 years in the military as a United States Navy medic and U.S. Air Force aerospace physiologist. He holds a bachelor's degree in biology, a master's in occupational safety and health and a master's in human communication. Contact Balas at joe@humanfactorssafety.com or 719-355-6326. Visit humanfactorssafety.com.



New & Innovative Products

Selected by the editors of Construction Business Owner

1 HYDRAULIC HAMMERS

Cat B-Prefix hydraulic hammers, available in silenced and non-silenced versions, are designed for plug-and-play operation with a range of compact equipment. The new hammers are suited for skid steer loaders, multiterrain loaders, compact track loaders, mini hydraulic excavators (3- to 8-ton operating weights) and backhoe loaders, working in a range of construction and light-demolition applications. The design is simple, reliable and industry-standard modular, with two moving parts in the piston and valve. Flat-top mounting enables compact working envelope and compatibility with a full complement of brackets to suit preference of coupler, linkage kinematics or machine size. Field service bushings are field-replaceable, and the lower bushing can be rotated 90 degrees for improved wear performance. The included toolbox contains a charging kit, hammer paste and spare parts. Grease fitting and gas pressure check points are easily accessed with a hammer on the machine. A gas-fired operation cycle delivers consistent, long-term, high production.

Visit cat.com.
Circle 240 on card.

2 PORTABLE LIGHT TOWER

Doosan Portable Power has expanded its line of portable light towers with the addition of the LCV6 and LCV8 models. Both models feature a small body design and 23-foot vertical mast. A clamshell-style canopy is made of highly durable composite material, yet is lightweight for easy access to internal components for regular maintenance. Both light towers are standard-equipped with a vertical mast that manually extends to 23 feet. With a new compact footprint, 17 units can fit on a standard flatbed trailer for more cost-effective transportation. Both towers are 82 inches long and 55 inches wide, with a travel position height of 101 inches. Both LCV models have a 52-gallon diesel fuel tank. The LCV6 and LCV8 have minimum runtimes of 119 hours and 97 hours, respectively, with four 1,050-watt (W) metal halide lamps. The LCV6 is powered by a Tier 4 Final compliant Kubota D1005 diesel engine with a Mecc Alte 6-kilowatt (kW) alternator. The LCV8 is equipped with a Tier 4 Final Kubota D1105 engine and Mecc Alte 8-kW alternator. The additional power provides operators with the flexibility to connect small tools and other electrical devices, and the 1,000-hour oil change interval helps to reduce the total cost of ownership with fewer maintenance costs.

Visit doosanportablepower.com.
Circle 241 on card.



3



1



2



4

3 TELEMATICS SOLUTION

NationsBuilders Insurance Services Inc. (NBIS), a construction risk management and insurance company, has announced Fleet Insight, a telematics solution designed for the NBIS policy holder. Fleet Insight offers a suite of benefits for fleet managers, including GPS tracking and geofencing, safe driver behavior monitoring, driver and vehicle analytics, maintenance assistance and tracking, and increased fuel efficiency. In organizations that have implemented telematics, fleet managers have experienced up to a 25-percent reduction in fuel costs, a 30-percent reduction in idle time and a 20-percent increase in fleet utilization. With its interactive console, the NBIS Fleet Insight program allows fleet managers to better supervise vehicles and drivers, as well as their overall business.

Visit nbis.com.
Circle 242 on card.

4 UPDATED, MANEUVERABLE, WHEELED EXCAVATOR

The updated **John Deere** 190G W excavator features a 173-horsepower diesel engine that meets Final Tier 4 emission regulations without aftertreatment devices. A lightweight, split-type hood provides wide-open access to the engine from the front, and same-side filters and water separator at ground level. The wheeled model boasts an operating weight between 43,431 and 45,300 pounds. The 190G W possesses a short wheelbase to slip into close quarters with ease. The excavator can quickly move between jobsites with a top speed of 21.7 mph. The cab comes equipped with an easy-to-navigate, enhanced LCD monitor and is protected by a heavy-duty undercarriage and durable D-channel side frames. Added strength comes from tungsten-carbide thermal-coated arm surfaces, oil-impregnated bushings and welded bulkheads within the boom. An enlarged cover provides additional protection.

Visit johndeere.com.
Circle 243 on card.

5 CONSTRUCTION PROCESS MEASUREMENT SYSTEM

***JET*protect Corporation**, manufacturer of security systems for large outdoor properties, has released the Active Sentry-CPMS, a construction process measurement system for large scale construction activity measurement. The new system applies radar, cameras and analytic technologies to automatically track people and vehicles outside and inside the perimeter. The ActiveSentry system can track a mix of 750 people and vehicles moving over several square miles. The security system can measure daily jobsite choreography and send the measurement data to project managers, capturing and tracking everything moving on the jobsite during construction and security of the property and equipment during rest. Each cSENTRY detects construction personnel and vehicles as they move and records their position within 10 feet, a timestamp to 30 milliseconds, and at a range up to 1.5 miles radially. The data can be accessed in real time or uploaded in bulk to the company data center for processing. The cameras are used in conjunction with the radar in the event of breaches in keep-out zones or adjacent property to support site managers' safety regulations. The system is simply installed and supplied with its own power system and communication path to the site trailers and cloud. Access through corporate secure terminals for data collection is used in tuning project efficiency, pushing pictures of unsafe movements and catching intruders at night.

Visit jet-protect.com.
Circle 244 on card.



5



6



8



7

6 SNAP-ON AUGERS & ADAPTERS

Little Beaver Inc., manufacturer of safe and efficient earth-drilling equipment, now offers affordable auger adapters to allow customers to match other manufacturers' augers with its reliable, one-person earth drills. The adapters are cost effective for contractors and rental centers. By enabling them to maximize the service life of their existing augers and attachments, customers are not forced to upgrade everything at once. A variety of adapters accommodate nearly any competitive auger. The manufacturer's mechanical and hydraulic earth drills power through tough soil for fence and deck building, landscaping, sign installation, soil sampling, horizontal boring, mobile home and light utility anchoring and more. The drills dig quickly, while their patented torque tube eliminates kickback for safe one-person operation. The complete line of augers includes three types—standard, carbide and heavy duty—available in 36- and 42-inch lengths and 1.5- to 16-inch diameters. A convenient, spring-loaded button secures each auger to the drill head, eliminating the need for pins or bolts. Little Beaver's reversible blades offer a long service life and are easy to replace. Little Beaver also offers adapters to make its extensive line of snap-on augers compatible with other manufacturers' drills.

Visit littlebeaver.com.
Circle 245 on card.

7 NO-DRILL, MAGNETIC STEEL MOUNTING PLATE

Industrial lighting manufacturer, **Larson Electronics LLC,** has released a no-drill magnetic steel mounting plate with a weatherproof seal. This lightweight mounting plate requires no drilling to install (so vehicles are left damage-free) and is compatible with 2016+ Nissan Titan XD trucks. The mount works for any light with a magnetic mounting base up to 20 pounds, including spotlights, flood lights, strobe lights, beacons, warning lights, signal lights, flashers, turn signals, brake lights, hunting lights, fishing lights, off-roading lights and more. Constructed of durable powder-coated aluminum and steel, this magnetic mounting plate is rugged and built to last in harsh outdoor conditions. Installation is dry and secure with the help of a weatherproof seal that protects the body of the vehicle against scratches. This mount also features a wind load appropriate for highway speeds. The magnetic mounting plate is installed via the third brake light on the back of the vehicle. The mount works with any magnetic mount light, making it versatile for construction vehicles.

Visit larsonelectronics.com.
Circle 246 on card.

8 HEAT-STRESS & TEMPERATURE-MANAGEMENT APPAREL

Radians, manufacturer of safety products, has expanded its Arctic RadWear line with the introduction of its new cooling vests and cooling T-shirts. Radians new cooling vests are made with Advanced ARCTIC technology that uses a unique, three-layer laminated fabric system that absorbs, stores and releases water to keep workers cool for hours. The layering system is waterproof and breathable, so your shirt remains dry during the cooling process. The cooling vests feature an adjustable, Velcro stretch waist that provides a comfortable, snug fit without restricting mobility. Available in blue, red and yellow, the vests are treated with SilverPlus antimicrobial protection to resist mold build-up and odors. To keep workers cool, comfortable and dry, Radians's new Class 2 and Class 3 cooling T-shirts in high-visibility green feature RadCool technology that self-activates when perspiration is present. The technology moves moisture away from the skin and circulates it through the fabric to keep you cooler, longer. The cooling T-shirts are designed with a mesh side-seam insert and Max-Dri technology. Both of these features maximize airflow to evaporate moisture quickly.

Visit radians.com.
Circle 247 on card.



9



10



11

9 LASER MEASURING SYSTEM CONNECTED THROUGH BLUETOOTH

Calculated Industries' Laser Dimension Master 165-BT combines the precision of laser measuring with the convenience of Bluetooth wireless technology. The LDM 165-BT can take accurate measurements that are sent to the mobile device of your choice, allowing a single person to measure up to 165 feet, upload the measurements to their phone and send it to an estimator within seconds. The LDM 165-BT is equipped to measure length, calculate area, determine basic indirect height and compute volume, all within 1/16 of an inch accuracy. Aside from using Bluetooth to communicate measurement details to your smartphone, tablet or laptop, the LDM 165-BT is also able to store the last 50 measurements in its memory for convenient recall. It has a 2-year, limited warranty.

Visit calculated.com.
Circle 248 on card.

10 TRANSPORTATION DATA SOLUTION

A business unit of Ford Smart Mobility, **Ford Commercial Solutions,** now offers OEM-grade data verified by Ford engineers, such as fuel use and vehicle health alerts. The Transportation Mobility Cloud (TMC) facilitates both new products. The service takes advantage of Ford vehicles' built-in modem to transfer vehicle data directly from the vehicle to the cloud, without the need for additional third-party hardware, management or installation downtime. The vehicle data is relayed to a fleet's internal IT system or telematics service provider through an application program interface. Utilizing Data Services, fleets can gain access to Ford vehicle information, such as GPS location, mileage, fuel use data, vehicle health alerts, driver behavior and more.

Visit corporate.ford.com.
Circle 249 on card.

11 LITHIUM HIGH-OUTPUT BATTERY

Milwaukee Tool announced the M18 REDLITHIUM HIGH OUTPUT HD12.0 battery with advanced power-delivery system and communication in the pack electronics, driving system compatibility. These advancements help deliver 15-amp, corded power on a range of new M18 FUEL products, providing faster application speeds and fade-free power through the full discharge. The pack runs 50 percent cooler than the HD9.0, so users can work harder and longer without the need to worry about overheating the pack. When working in collaboration with the POWERSTATE brushless motor and REDLINK PLUS intelligence, the HD12.0 battery delivers 33 percent more runtime than the HD9.0 and is efficient in cold weather, as it's able to operate in extreme weather conditions.

Visit milwaukeetool.com.
Circle 250 on card.

NEED BUSINESS HELP?

Want to:

- **Grow with higher margins?**
- **Build a management team?**
- **Make more money?**
- **Join a Mastermind BIZGROUP**
- **Implement the *BIZ-BUILDER BLUEPRINT***

George Hedley, Hardhat Bizcoach, Is Available to Be Your Bizcoach



George Hedley CPBC was named *2017 Business Coach Of The Year* by the Professional Business Coaches Alliance

BIZ-BUILDER BLUEPRINT ACTION PLAN

Email George to set up a BIZCOACH program
GH@hardhatpresentations.com

GEORGE HEDLEY'S NEW BOOK IS NOW AVAILABLE!

Get Your Construction Business To Always Make A Profit!



Proven strategies, systems, steps & templates to implement your winning:

- 5-year BIZ-Plan with targets & goals
- Financial, mark-up, margin & profit plan
- Management team & people program
- Field & project management systems
- Structure & organizational chart
- Estimating, marketing & sales systems
- Scorecard tracking system

AVAILABLE ON AMAZON.COM
or **hardhatbizschool.com/bookstore**

12 GPS TRACKING & TELEMATICS SERVICE

Command Alkon, creator of integrated supply chain technology solutions for the heavy building materials industry, announced its new TrackIt Turn-Key Service that will replace hardware failures or repair warranty issues at no charge to the customer while also eliminating large, upfront CapEx costs. The service rolls out this month and offers new, ruggedized tablet options with replaceable batteries and new, fully functional and reliable engine interface devices. All hardware, technology, engine connectivity devices and installation have been bundled into a single, predictable monthly package. TrackIt is available today in the U.S. market. There are two hardware options: Samsung Galaxy Tab Active II and Panasonic Tough Tab B2. TrackIt Turn-Key Service was developed in response to customer requests. People with requirements for robust engine diagnostics also benefit from the new TrackIt Turn-Key Service solution. A new Engine Data Connection (EDC) device is optional, along with a specialized software stack from a company called Noregon, which will provide customers with more reliable and more overall engine data. The combination of the EDC device with the software will allow fleet owners and operators to easily capture and transfer the engine diagnostic data from their trucks.

Visit commandalkon.com.
Circle 251 on card.



12

13 LITHIUM-ION, JUMP-STARTING POWER PACK

Weego, manufacturer of compact portable jump starters, released a versatile, rugged 12-V, lithium-ion, jump-starting power pack built for professionals—Weego 66. The Weego 66 sets a new standard for compact versatility, delivering the power needed to get cars, trucks, tractors, boats and light-duty equipment moving again, every time. Weighing only 2.5 pounds, Weego 66 is a practical and convenient solution for any jobsite. The four-in-one power pack made for 12-V gas and diesel engine systems, jump starts with 2,500 peak amps and 600 cranking amps; is capable of bringing phones, tablets, laptops or other mobile devices back to life via 5-V, USB and 19-V outputs; powers 12-V, portable accessories; and provides ultra-bright lighting functionality with a 600-lumen dual LED flashlight. Weego 66 comes with Smarty Clamps—innovative, patented, ergonomic jump starter clamps that incorporate lights and sounds to guide users through the jumping process and feature built-in, anti-spark reverse polarity, overheat and power surge protections. Weego 66 is easy and safe to use. The tapered tips fit in tight spaces, and the clamps open extra wide and are powered on both sides to ensure good connections. Weego 66 provides up to 2 years of standby time and a broad operating range of -4 degrees Fahrenheit to 140 degrees Fahrenheit. Offering AutoBoost functionality for those extra-tough situations, Weego 66 automatically sends maximum power to dead batteries (down to 0.5 V) without an override button.

Visit myweego.com.
Circle 252 on card.

13

14 VIBRATING SCREEN

Haver & Boecker, equipment manufacturer and solutions provider for aggregates and mining applications, offers the Tyler L-Class vibrating screen for classifying wet or dry material, as well as a dewatering method. The machine is versatile and easy to maintain, with no timing belts or gears that normally need replacing. Producers can customize the 6-foot-wide machine in two lengths—16- and 20-foot. The L-Class can be inclined or declined as much as 3 degrees, handles up to 400 total petroleum hydrocarbon (tph) and features a 45-degree-mounted, double-shaft overhead drive system with direct-mounted motors. Producers can access multiple speed and stroke options by changing the pulleys and plate weights. The body design offers simplified maintenance with a one-piece, removable head and shaft assembly. The L-Class does not require timing belts or gears, making maintenance even simpler. When positioned at a negative incline of about 3 degrees, the vibrating screen's G-force moves wet material uphill. The thick layer of material on the screen acts as a filter cake and presses water out, as well as traps fine particles that would be lost in a thin layer screening process.

Visit havercanada.com.
Circle 253 on card.



14



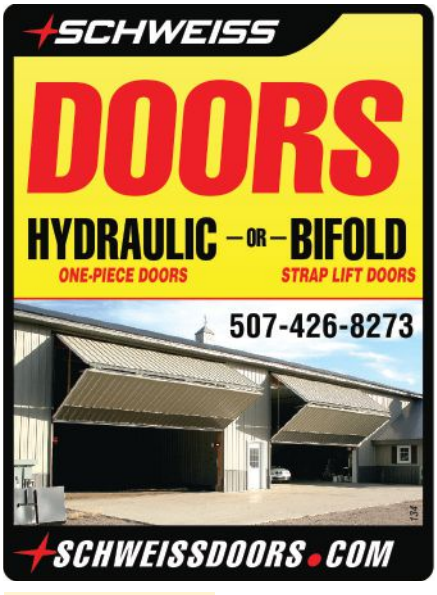
Circle 114 on card.



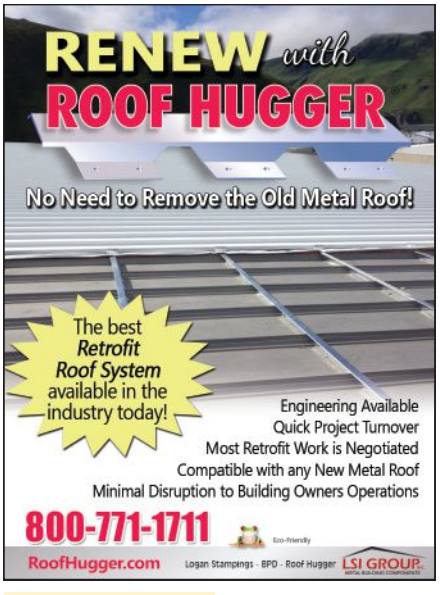
Circle 100 on card.



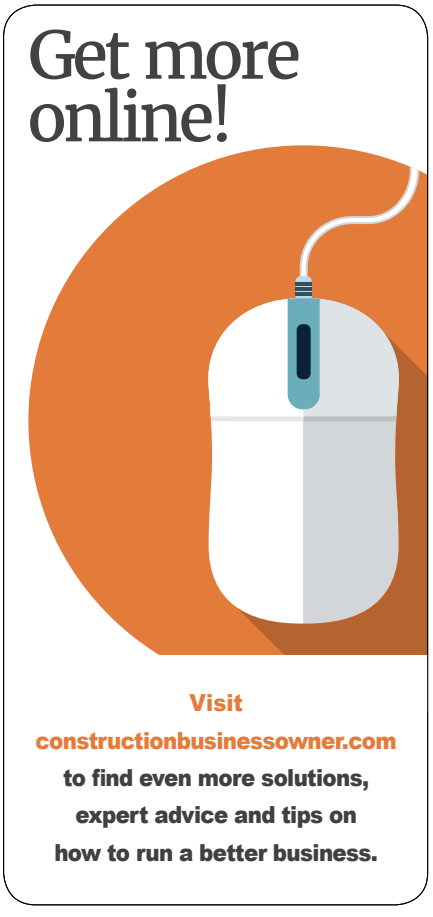
Circle 103 on card.



Circle 117 on card.



Circle 116 on card.



ADVERTISER INDEX constructionbusinessowner.com

Advertiser Name	RS#	Page
Advantage Funding Corporation	100	47
American Eagle	101	23
bidadoo	102	31
ClearSpan Fabric Structures	103	47
Dee Concrete	104	34
Foundation Software	105	5
GPS Insight	107	1
HardHat Presentations		45
Isuzu Trucks	109	IBC
JCB	110	IFC
John Brown and Sons		34
Lifting Gear Hire Corporation	112	35
Michelin	113	21
National Construction Rentals	114	46
Payroll4Construction.com	106	3
Roof Hugger	116	47
Schweiss Doors	117	47
Shell Oil / Lubricants	118	BC
Thieman Tailgate	119	32
VP Buildings	120	27
Yamaha Motor Corp	121	26

Annual Value of Construction Put in Place

2016/2017/April 2018 Annual Rate Comparison

This chart compares the two previous years' total value of construction put in place to an annual forecast based on April 2018 figures. (Millions of dollars. Totals may not add up perfectly due to rounding.)

	2016	2017**	Apr 18
Total Private Construction	**909,664**	**982,071**	**1,014,282**
Residential	475,167	532,542	556,294
Nonresidential	434,496	449,529	457,988
Total Public Construction	**279,277**	**290,577**	**296,122**
Residential	6,592	6,965	7,135
Nonresidential	272,685	283,612	288,987
TOTAL Construction	**1,188,941**	**1,272,648**	**1,310,404**

**Seasonally Adjusted Annual Rate. Source: U.S. Census Bureau*
***2017 numbers revised for annual report*

$1,310,404

APRIL 2018 TOTAL ANNUAL VALUE OF CONSTRUCTION PUT IN PLACE

"While there was slower growth in April for new project work coming into architecture firms, business conditions have remained healthy for the first 4 months of the year," said AIA Chief Economist Kermit Baker, Hon. AIA, Ph.D. "Although growth in regional design activity was concentrated at firms in the Sunbelt, there was balanced growth so far this year across all major construction sectors."

AIA Architectural Billings Index (ABI)

National			*Regional - Billings				*Sectors - Billings			
Month	Billings	Inquiries	Northeast	Midwest	South	West	Multifamily Residential	Commercial/ Industrial	Institutional	Mixed
Nov-17	55.0	61.1	52.8	50.4	52.8	54.8	53.9	53.3	52.4	53.6
Dec-17	52.8	62.0	49.4	52.9	56.3	53.0	55.4	54.8	51.2	50.4
Jan-18	54.7	61.1	47.3	54.8	55.3	56.2	56.0	53.3	52.5	50.1
Feb-18	52.0	62.4	47.5	54.5	54.4	57.6	56.6	51.0	53.8	49.7
Mar-18	51.0	58.1	49.0	50.7	53.2	53.4	53.4	53.1	49.7	51.1
Apr-18	52.0	56.7	50.3	49.6	51.8	55.1	50.7	52.7	52.0	50.6

For more information on the index or to subscribe to the complete historical data going back to 1995 for your internal analysis, **please contact economics@aia.org.** The ABI presents monthly construction billings data, using a base score of 50. A score of more than 50 indicates a growth from the previous month, and a score of less than 50 indicates a contraction from the previous month. A score of 50 indicates no change. Source: The American Institute of Architects (AIA), Architecture Billings Index (ABI).

*Regional and Sectoral indexes are three-month moving averages, due to small sample size. All data is seasonally adjusted.
**Every January, the AIA research department updates the seasonal factors used to calculate the ABI, resulting in a revision of recent ABI values.

ISUZU

TRUCKS THAT WORK AS HARD AS YOU DO!



LOW CAB FORWARD MEDIUM DUTY TRUCK CLASSES 3-6

MULTIPLE WHEELBASES FOR BODIES 10-30 FT LONG

CLASS LEADING FUEL ECONOMY

GVWR RATINGS 12,000 - 25,950 LBS

OUR LINEUP OFFERS 2 DIESEL ENGINES AND A GAS ENGINE THAT IS CNG/LPG CAPABLE

Go to WWW.ISUZUCV.COM or call 866-441-9638 for additional information.

Vehicles shown with optional equipment; some equipment is dealer installed. N and F-Series vehicles are assembled from component parts manufactured by Isuzu Motors Limited and by independent suppliers who manufacture such components to Isuzu's exacting standards for quality, performance and safety. Truck bodies represented herein are products of Morgan Corporation and Thermo King. Please see your authorized Isuzu dealer for additional details.

© 2018 ISUZU COMMERCIAL TRUCK OF AMERICA, INC.

Circle 109 on card.

FROM INCREASING OIL LIFE TO EXTENDING HIGHWAYS

TOGETHER IT'S POSSIBLE

To discover how we can help keep your business running, go to shell.us/lubricants

SHELL LUBRICANTS
TOGETHER ANYTHING IS POSSIBLE



Circle 118 on card.

©SOPUS Products 2017. All rights reserved. CS12510-01