

On-Site

SPRING 2020



A surgical approach

Sharpen your project accounting with activity-based costing

Reviewing the finer points of the Section 199A tax deduction

Industry trends: Megaprojects are on the rise

LEED isn't the only green-building game in town



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A SURGICAL APPROACH

Sharpen your project accounting with activity-based costing

Activity-based costing is an accounting methodology that identifies activities and assigns a cost to each one based on resources consumed. It's often associated with manufacturing but can be applied to construction as well.

Many contractors are pleasantly surprised by the results of activity-based costing in comparison with more traditional job-costing methods, which typically rely on extrapolating historical data. Whereas these methods are like using a buck knife to cut paper, activity-based costing provides a more surgically precise approach.

Cost drivers

The crux of activity-based costing is the use of "cost drivers" to estimate, track and manage project costs. A typical cost driver in construction is labor hours. When workers are on-site, the cost clock is ticking.

Pinpointing these costs with absolute precision helps the estimator price the job to allow for a reasonable profit. From there, knowing the hourly labor rate of each worker as a cost driver provides leadership with the decision-making tool they

need to know when to add laborers to the job, demobilize and send workers to another project, or even send some people home.

Pinpointing costs with absolute precision helps the estimator price the job to allow for a reasonable profit.

To be clear, labor hours are just one cost driver among many. For example, an activity-based costing estimate for hanging drywall might be figured with "number of sheets" as the cost driver. Number of sheets can be broken down to "number of laborers required to hang each sheet," "laborers' salaries per sheet," and "number of drywall screws required for each sheet." This way, an overall cost per sheet of drywall can be acquired.

Various activities

Instead of assigning a standard square footage rate for, say, tile installation or stucco application, activity-based costing assigns cost rates to the various construction activities that go into the work. Each trade might have several different activities.

For instance, you might start with:

- Setting up the jobsite,
- Performing the work,
- Cleanup, and
- Demobilizing.

To better visualize these activities and their associated costs, you can create a grid. Identify the number of workers for each activity — let's say a foreperson and two laborers — and the number of labor hours required. You can break down each



THE TOUGH PART COMES FIRST

Contractors often find the concept of activity-based costing imposing because of the rigorous and complex task of calculating the various cost drivers. (See main article.) Well, here's some good news: Many of the calculations are difficult only on the first round of implementation. Once established, cost-driver calculations can be applied more easily for a long time going forward.

For example, calculating a per-mile rate for driving might be challenging initially because fundamental questions arise such as: "How much does one mile of vehicle insurance cost?" However, once a skilled accountant does the research and executes the calculation, you may be able to use the per-mile rate on future jobs with only slight modifications to accommodate increases or decreases in local average gasoline cost.

activity in this manner, using labor hours or other cost drivers.

Critical calculations

As you might imagine, accurately calculating the rate for each cost driver is critical. So, before using activity-based costing, you'll need to establish the true costs of the drivers you use.

For example, a laborer's time might cost \$20 an hour in base pay, plus 7.65% in employment taxes and an hour's worth of health insurance and workers' compensation coverage. Make a chart of the hourly rates for each class of employee — including project executive, project manager, superintendent, foreperson, laborer and journeyman. Anyone who touches a job in any way should have his or her true labor rate calculated if you're going to use labor hours as the cost driver.

The choice of cost driver varies depending on the activity. For instance, a per-mile rate would be better for materials delivery. To determine the true cost of a worker who drives a vehicle, include the average gasoline cost, insurance costs and even the depreciation cost of the vehicle per mile.

Then measure the jobs by their distance to and from the location where the materials are stored or bought. Truck capacity is then calculated to see how many trips will be required so that the number of miles can be accurately estimated. Then, the per mile rate — with "distance in miles" as the cost driver — can be assigned to the activity of materials delivery on each job

you price. Whereas some estimators plug in mobilization or materials delivery cost as a flat percentage, activity-based costing more accurately estimates the delivery costs by assigning "per mile" as the cost driver in this manner.

Going back to the drywall example, the cost of screws and the lineal feet of tape required to install one sheet of drywall are built into the per-sheet cost driver calculation. Once a per-sheet cost is figured, it's then added to:

- The salary cost of the two laborers,
- A portion of the salary of one foreperson,
- An applicable health insurance and workers' compensation cost proration, and
- A cost proration for liability insurance and other applicable costs.

This way a per-sheet drywall installation cost is calculated with hanging drywall as the activity.

The next level

Performed properly, activity-based costing enables you to more accurately estimate and track costs of construction activities on your projects. In turn, you can eliminate wasteful spending and more effectively build in profits.

But make no mistake: Activity-based costing does require a greater attention to detail, more administrative "legwork" and, above all, highly skilled accounting. If you believe your construction company is ready to take its job costing to the next level, activity-based costing might be for you. ■

REVIEWING THE FINER POINTS OF THE SECTION 199A TAX DEDUCTION

It's been over a year since the IRS issued final regulations regarding Internal Revenue Code Section 199A. This Code Section created a tax deduction enabling owners of sole proprietorships, partnerships, limited liability companies and S corporations to write off up to 20% of their qualified business income (QBI).

If your construction company is organized under one of these entity types, now's a good time to review the finer points of the Sec. 199A deduction to determine whether it might benefit your tax situation.

Know the limits

The deduction is subject to two significant limitations for owners whose taxable income exceeds certain thresholds. First, it's unavailable for specified service trades or businesses (SSTBs) after a certain earning level, including consultants. Second, the deduction is limited to 50% of the owner's allocable share of the entity's W-2 wages or, if greater, 25% of W-2 wages plus 2.5% of the unadjusted basis of qualified depreciable property.

Sec. 199A specifically excludes "performing services as an employee" from the trades and businesses eligible for the deduction.

Both limitations are phased in gradually, beginning at taxable income of \$160,700 (\$321,400 for joint filers). They're fully applicable when taxable



income reaches \$210,700 (\$421,400 for joint filers). The final regs generally apply to tax years ending after February 8, 2019. For the most part, they conform to proposed regulations that were issued in August 2018, with a few important modifications.

Investigate the details

Several issues of importance to construction companies may come into play when seeking to claim the deduction. First, Sec. 199A specifically excludes "performing services as an employee" from the trades and businesses eligible for the QBI deduction. So, there may be an incentive for construction workers to convert from employee to independent contractor status to qualify for the deduction.

The proposed regulations put a damper on this strategy by providing that an employee who's subsequently treated as a nonemployee while performing substantially the same services is presumed to be an employee for Sec. 199A purposes. The final regulations take this a step further, providing that the presumption will continue for three years after the conversion. The presumption can be rebutted

with evidence that the worker is performing services as an independent contractor.

Another important issue is consulting services. Construction businesses may provide certain consulting services connected with the performance of construction services without being considered SSTBs (provided they're not paid for separately). But certain standalone consulting services may jeopardize the deduction for high-income owners. Fortunately, the regulations contain a "de minimis" rule: A business isn't an SSTB if less than 10% of its gross receipts (5% if gross receipts exceed \$25 million) is attributable to consulting or other specified services.

What if a construction company's standalone consulting services exceed the de minimis threshold? Under the proposed regulations, that would have tainted all the business's income, making its high-income owners ineligible for the pass-through deduction. The final regulations, however, allow owners to claim the deduction for QBI attributable to non-SSTB services if the firm's SSTB and non-SSTB trades or businesses are "separate and distinct."

What defines "separate and distinct" is a factual question. At minimum, the company must keep a "complete and separable set of books and records" for each trade or business. An example in the final regulations suggests that it's helpful if each trade or business has separate employees, though it's unclear whether that's a requirement.

Finally, there's the matter of aggregation. To maximize the deduction, the proposed regulations allow owners to aggregate separate businesses for Sec. 199A purposes, provided they're part of a larger, integrated trade or business and meet certain other requirements. The final regs contain several provisions that make aggregation easier, including an option to make an aggregation election at the entity level.

Ask for help

The Sec. 199A deduction remains a potentially valuable tax break to consider if your construction company operates under one of the applicable entity types. Ask your CPA for help determining whether to pursue the deduction and, as always, for assistance in completing and filing your tax return. ■

INDUSTRY TRENDS: MEGAPROJECTS ARE ON THE RISE

They're big, and they're big business. Megaprojects — large-scale and often high-profile construction projects that cost \$1 billion or more — are taking the industry by storm.

When compared with "standard" projects, megaprojects are a different animal. They have ambitious objectives, lengthy lead times, amplified complexity and intense stakeholder involvement. Consequently, they come with bigger risks of delays, cost overruns, conflicts and even lawsuits.

Driving factors

In the United States alone, more than 670 megaprojects are currently in the planning stages, according to a 2019 report from construction industry consultants FMI. The organization expects total U.S. construction put in place on megaprojects to exceed \$2.5 trillion, reaching more than \$350 billion per year (roughly 20% of total construction spending) over the next decade.

Population growth in urban areas is driving the need for increasingly complex projects addressing infrastructure, housing, energy and more. Project owners



are rolling smaller jobs into larger projects to take advantage of financing and operational opportunities given through public-private partnerships and other alternative project delivery methods.

Questions to ask

When considering whether to bid on a megaproject, you'll have much to discuss with your executive team and external advisors. Here are a few questions to ask:

What's our acceptable risk profile? Identify the risks your construction company is willing to take on. These include:

- Technological factors (expensive upgrades, steep learning curve for management and staff),
- Scope creep and scheduling difficulties,
- Cost and inflationary factors,
- Strain on labor availability and human resources staff, and
- An unstable political climate possibly affecting job support and funding.

Ideally, risk should be spread equitably among project partners and stakeholders.

Are the owners stable and trustworthy? With so many megaprojects becoming available, there may be multiple owners soliciting bids for the same project. Bid for owners who are financially solvent and have strong track records of ethical behavior. From there, prioritize those who can clearly define the project and articulate how they plan to construct it.

Who will our partners be? Successful megaprojects operate under a one-team, collaborative approach. The best partners will complement your company's skills and resources; prioritize open communication; and have similar goals, values and management styles. If you don't think you'll be able to work well with any of the other parties involved, you should probably pass on the job.

Do we have the right team in place? Successfully delivering megaprojects requires a coordinated internal project management approach. You'll need experienced project managers and talented team players who will last through the job. Everyone must be on the same page and ready to rise to the inevitable challenges of a large, lengthy and complex project.

Do we have the right technology? Megaprojects are technology driven. You'll likely be communicating with other parties via a collaborative software platform, and the job itself may very well involve a building information modeling (BIM) system. Consider your company's aptitude and equipment capabilities for advanced forms of technology.

High risk, high reward

Megaprojects are high-risk, high-reward propositions. Even if your construction business isn't quite ready to participate in one, it's a good idea to monitor megaproject activity in your market and observe its impact on your local economy and supply chain. ■

LEED ISN'T THE ONLY GREEN-BUILDING GAME IN TOWN

Mention “green building” and most contractors think of the U.S. Green Building Council’s Leadership in Energy and Environmental Design (LEED) program. LEED may be the front-runner in green building rating systems, but it’s not the only game in town. Here are some others you may encounter when working with project owners:

BREEAM USA (breeam.com/usa). Founded in the United Kingdom in 1990 — one year before LEED — the Building Research Establishment Environmental Assessment Method (BREEAM) was introduced to the United States in 2016. The program is open to most existing commercial buildings; it also certifies residential and commercial new construction, infrastructure, renovations, tenant build-out, and community master planning.

Green Globes (greenglobes.com). Green Building Initiative launched the Green Globes program in 2004, which is based on the BREEAM Canada standard and is meant to be user-friendly. Both BREEAM and Green Globes begin with an online self-assessment; results are assessed by a third party.

Parksmart, formerly Green Garage Certification (parksmart.gbci.org/certification). Administered by Green Business Certification Inc., Parksmart certifies new and existing parking structures. Points are awarded for “forward-thinking,” sustainable practices in three categories: management, programming and technology structure.

Energy Star (energystar.gov/buildings). Originally developed as a voluntary labeling program to promote energy-efficient products, the U.S. Environmental Protection Agency and Department of Energy expanded the program in the 1990s to include buildings/plants and homes.

WELL (wellcertified.com). The International WELL Building Institute’s WELL standard debuted in 2014 and is gaining momentum in commercial building projects. WELL focuses on the well-being of building occupants, promoting elements such as biophilic design (connecting building occupants to nature), materials with no-to-low volatile organic compounds, and building features that maximize daylight and enhance air quality and thermal comfort.

Living Building Challenge (living-future.org/lbc). The International Living Future Institute’s Living Building Challenge is both rigorous and performance-based; buildings must demonstrate that they generate more energy than they consume. Projects are monitored for 12 months before certification is granted. The goal is to have minimal impact on the natural world.

Zero Energy Building (living-future.org/zero-energy). The International Living Future Institute also administers Zero Energy Building certification. To achieve net-zero certification, 100% of a building’s energy requirements on a net annual basis must be met by onsite renewable energy sources such as solar or wind energy — no combustion allowed, with limited exceptions such as offsetting through offsite renewables.



Passive House (phius.org). Developed in Germany in the 1990s and introduced to the United States in 2007, the program certifies buildings that achieve high energy savings without applying expensive “active” technologies (such as photovoltaics or solar thermal hot water systems). In North America, it’s administered by Passive House Institute. ■



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How Robotics Process Automation is Affecting the Construction Industry

Robotics technology has been around for decades but only recently gained popularity in the construction industry. The technology has been proven to increase workplace efficiencies, and contractors who hope to advance in 2020 may want to consider how robotics software can play a part.

What Is Robotics Process Automation?

Robotics process automation – RPA – is a business process that uses technology and artificial intelligence to simplify everyday tasks. This technology takes the form of robotic software, sometimes called “bots,” to automate repetitive, high-volume tasks across all areas of business. RPA effectively acts as an electronic workforce and can provide data that helps leaders make more effective strategic decisions.

Uses for Robotics Process Automation

RPA is so adaptable that it can be used at construction sites and in back-office environments. At the construction site, RPA can take over some of the following tasks:

- Laying bricks in a precise, pre-determined pattern
- Reducing materials waste by planning how raw materials are cut or applied
- Manufacturing higher-quality materials
- 3D printing building supplies
- Planning the most efficient demolitions and using robots to raze a property
- Packing and moving materials safely and efficiently

But truthfully, RPA may be even more valuable assisting back-office workers. There are many administrative tasks bots can assist with, including:

- Processing invoices and sending confirmation emails to vendors

- Drafting general ledger entries, estimates, proposals, email responses, and monthly reports
- Updating supplier or subcontractor lists with new information found in emails or on the web
- Searching for candidates on job-posting websites
- Preparing spreadsheets to assist in tax preparation
- Scanning paper documents and filing them electronically
- Digitally tagging electronic documents with search terms
- Requesting and collecting onboarding documentation from new employees
- Performing routine maintenance on IT systems
- Scheduling new jobs
- Managing the network service desk
- Tracking trends and alerting management to economic changes

Contractors who adopt RPA will be in the minority. After all, paper blueprints and physical timesheets are still the norm. But those who take the leap have a lot to gain. Mundane tasks like filling out paperwork or manually inputting payroll reports will be gone, freeing up workforce hours to spend time on more productive measures.

Where to Begin

Specialized business consultants can perform an initial needs assessment for a construction company and oversee the roll out of new RPA technology.

Even with support from a professional consultant, legal guidelines may limit what RPA software a company can employ. For example, local ordinances may not allow the use of 3D printed structures, and municipalities may not accept blueprints or demolition plans generated by a bot. But the industry should take advantage of the technology when they can. RPA software has the potential to improve efficiencies across the board, and taking small steps now will set the groundwork for even bigger technology leaps in the future.