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Technology is of the Devil

Paul Godwin
BIM Manager

MAREK

- Learning Objective 1
  Discover methods of overcoming tradition to implement technology
- Learning Objective 2
  Discover lessons learned regarding how to get stakeholder buy-in
- Learning Objective 3
  Learn about finding the right stakeholders to help in implementing a new way of doing things
- Learning Objective 4
  Learn how to teach an old dog new tricks

Description

Come and see an overview of the trials and tribulations Marek faced when implementing new technology, specifically PlanGrid, into an 80-year-old Division 9 subcontractor. We will discuss our wins and losses, plus the strategies and partnerships that led to the overall success of the project.

Speaker(s)

Paul Godwin has 23 years of experience in drywall construction. Paul joined MAREK in 2006 at the Houston branch. MAREK is an 80-year-old Division 9 subcontractor with annual sales of 400+ million. Paul managed the Central Estimating department which provided estimates for MAREK’s seven branches. In 2010, Marek instituted its BIM program from within the Central Estimating department. This department is now a full time BIM division that currently employs 6 modelers. Paul also manages the Data/Print department which is responsible for downloading, converting, renaming, sorting, & printing all plans for MAREK's projects. Paul is tasked with research & development for BIM, AR, VR, new software for project management & estimating, & field technology. Paul speaks with architects, general contractors, & software companies concerning BIM's overall outlook as well as MAREK’s deliverables. Paul gives presentations & demonstrations relating to MAREK’s use of AR/MR technology.

While trying to determine what to include in a Class Handout to highlight my expertise in the topic of implementing new technology, I realized I am not an expert.
I am just a guy, looking for a software, that will make my field love me.

When you work for a company with 80 years of experience, who is considered one of the tops in its field, you get the standard responses when trying to implement something new:

1. What do we need that for? I have been doing this for 30 years without it.
2. If it aint broke, don't fix it.
3. But that's not the way we have always done it.

   Although there is some validity to their argument, it does not change the fact that no matter how successful a company is, if it cannot adapt it will not survive. The problem is that in our industry technology is often seen as the enemy, or the devil if you will, rather than a solution.

Instead of giving you with my take on what to do or not do, as you will get plenty of that in my presentation, I am going to give you advice from industry leaders that will help you in your journey. Not everything works for everybody, but each article has something useful for technology implementation. The information below will give you a vast field from which to choose ideas and strategies to help navigate the minefield of trying to introduce new and disruptive methods to an industry that routinely resists change, even if it is for the better.

Remember two things when starting your adventure in deploying a new technology:

- If "necessity is the mother of invention" I would argue that frustration is the mother of innovation.

- "Impossible is not a word. It's just a reason for someone not to try."
  _Kutless

Contents:

How Technology Is Reshaping the Construction Industry

CONSTRUCTION TECHNOLOGY

What do a pickup truck, a nail gun, a portable circular saw, a cement mixer truck, and a modern hydraulic excavator all have in common? The obvious answer is that they are all tools and equipment commonly found on construction sites today. Another correct answer would be that they are all pieces of technology that didn't exist 100 years ago.

Imagine what the jobsite would be like today without technology. Without power tools, we'd be cutting boards and drilling holes by hand. Without heavy equipment, laborers would be excavating sites and digging trenches with shovels and pickaxes. Without the elevator, buildings would only be a few stories tall.

The point is, technological advancements have always driven construction forward, so it's odd that so many companies are slow to adopt new tech. We're able to build stronger, taller, and more energy efficient structures. Technology has made construction sites safer and workers more efficient. It has allowed us to increase productivity, improve collaboration, and tackle more complex projects.

Today, new technologies in construction are being developed at a breakneck pace. What seemed like future tech 10, 20 years ago like connected equipment and tools, telematics, mobile apps, autonomous heavy equipment, drones, robots, augmented and virtual reality, and 3D printed buildings are here and being deployed and used on jobsites across the world.

And, while construction firms continue to underinvest in technology, venture capitalists are betting big on the future of construction tech. A report from James Long LaSalle, Inc. released earlier this year shows that venture capital firms invested $1.05 billion in global contech startups during the first half of 2018. That's a nearly 30% increase over the amount invested for all of 2017. Since 2009, investors have closed 478 funding deals totaling $4.34 billion.

Here's a look at some of the major areas where technology is impacting and improving the construction industry:

Productivity

According to research from McKinsey & Company, construction productivity has remained flat for decades. The traditional method of design-bid-build makes construction disjointed and siloed. Every construction site is different, presenting its own unique set of challenges and risks. This makes it difficult to streamline processes and increase productivity the way industries like manufacturing and retail have been able to do.

Software & Mobile Apps

Today there are software and mobile solutions to help manage every aspect of a construction project. From preconstruction to scheduling, from project management and field reporting to managing your back office, there's a software solution out there to help streamline your processes and improve productivity. Most software solutions are cloud-based, allowing changes and updates to documents, schedules, and other management tools to be made in real time, facilitating better communication and collaboration.

Mobile technology allows for real-time data collection and transmission between the jobsite and project managers in the back office. Cloud-based solutions enable on-site employees to submit timecards, expense reports, requests for information (RFIs), work records, and other verified documentation. This can save hundreds of hours per year in

data entry and automatically organizes critical files—no more shuffling through files looking for old reports.

More and more software providers are forming strategic partnerships to allow you to seamlessly integrate your data with your other software solutions, making it easier than ever to run your business.

Offsite Construction

Offsite construction is typically used on projects with repetitive floorplans or layouts in their design such as apartment buildings, hotels, hospitals, dormitories, prisons, and schools. Offsite is performed in a controlled environment and it works similar to an auto manufacturing plant. At each station, workers have all the tools and materials to consistently perform their task, whether that be constructing a wall frame or installing electrical wiring. This assembly plant method of construction reduces waste and allows workers to be more productive.

Offsite construction typically comes in two forms: modular and prefabricated. With modular construction, entire rooms can be built complete with MEP, finishes, and fixtures already installed. They can be rooms as small as bathrooms or modules can be fitted together onsite to create larger spaces like apartment units. The modular units are transported to the construction site and then inserted and attached to the structural frame.

With prefabricated construction, building components are built offsite and then assembled or installed once they have been transported to the construction site. Prefabricated building components cover everything from framing, internal and external wall panels, door and window assemblies, floor systems, and multi-trade racks, which are panels with all the ductwork, wiring and plumbing packaged together.

AI & Machine Learning

Construction firms are now using data to make better decisions, increase productivity, improve jobsite safety and reduce risks. With artificial intelligence (AI) and machine learning systems, firms can turn the mountains of data they have collected over the years on projects to predict future outcomes on projects and gain a competitive advantage when estimating and bidding on construction projects.

AI can improve worker productivity by reducing the amount of time wasted moving about the construction site to retrieve tools, materials, and equipment to perform certain tasks. Workers are tracked throughout the day using smartphones or wearables.

Sensors installed on materials and equipment track how everything else is moving about the construction site. Once enough data sets are collected, AI can analyze how workers move about and interact with the site to come up with solutions to reorganize the placement of tools and materials to make them more accessible to workers and reduce downtime.

Robots and artificial intelligence (AI) are also being used to monitor jobsite progress with real-time, actionable data to improve jobsite productivity. Autonomous drones and rovers are equipped with high-definition cameras and LiDAR to photograph and scan the construction site each day with pinpoint accuracy. AI then uses those scans to compare against your BIM models, 3D drawings, construction schedule, and estimates to inspect the quality of the work performed and to determine how much progress has been made each day.

Deep-learning algorithms are then used to identify and report errors in work performed. This can be anything from the excavation and site work to the mechanical, electrical and plumbing systems. The AI can recognize a building component based on its shape, size and location even if only a portion of the component is visible.

By classifying and measuring quantities installed, these systems can tell you how much work was done each day, which it can then compare against your construction schedule and alerts you if your project is falling behind. The AI also detects deviations between installed components and onsite work with models so you can quickly identify errors and avoid costly rework.

Safety & Training

As technology adoption continues to ramp up in the construction industry, one area getting a lot of attention is improving safety. Of the 4,963 worker deaths in 2016, 991 were in construction. Worker safety should be the number one priority of every construction company and technology solutions are making it easier to properly train and monitor workers to prevent accidents and reduce the rate of serious injuries and worker deaths.

Augmented & Virtual Reality

Safety training and equipment operator training are two areas where virtual reality (VR) could have a strong impact on the construction industry. With VR, workers could get exposure to environments such as confined spaces or working at height in a safe, controlled environment.

VR simulators have been used for years to train soldiers, pilots, and surgeons and could be used in the same way to train workers on everything from operating cranes and excavators to doing welding and masonry work.

Augmented reality (AR) is another technology that can greatly improve safety on the construction site. Whether it’s allowing for a more detailed safety plan to be developed or providing training on heavy equipment using actual equipment on real sites with augmented hazards, there are a number of ways that AR can be deployed on the jobsite.

Workers could walk to a specific area of a jobsite and have a safety checklist, specific to the task at hand, pop up on a display integrated into a smart hard hat or safety goggles to make sure they have the proper personal protective equipment on and are performing their tasks safely. Safety managers and trainers could monitor exactly what the workers are seeing and walk them through tasks as they work.

Wearables

Wearables are being used to monitor workers and their environment to make jobsite safer. Wearable tech in construction is being embedded into apparel and personal protective equipment (PPE) already common on construction sites like hard hats, gloves, safety vests and work boots.

Construction wearables are being outfitted with biometrics and environmental sensors, GPS and location trackers, Wi-Fi, voltage detectors, and other sensors to monitor workers' movements, repetitive motions, posture, and slips and falls. Geofencing allows site or safety supervisors to establish restricted or hazardous areas that will alert workers with a combination of alarms and lights that they have entered an area that is off limits.

Smart clothing, or e-textiles, that can monitor vital signs like respiration rate, skin temperature, and heart rate will also make their way to the construction site. These wearables will be able to monitor a worker's posture, track movements, determine if they are suffering from fatigue and whether they are intoxicated or under the influence of narcotics. Keeping a watchful eye on workers can help predict an accident before it occurs.

Site Sensors

Site sensors that can be deployed across a construction site to monitor things like temperature, noise levels, dust particulates, and volatile organic compounds to help limit exposure to workers.

The sensors are mounted throughout the construction site and can alert workers immediately when they are at risk from permissible exposure levels being reached. Data from the sensors are collected and can be analyzed to mitigate exposure levels and keep workers safe and stay compliant with OSHA regulations.

Labor Shortages

As a result of the housing crash and the Great Recession, over 2.3 million workers left the construction industry through layoffs, early retirement, or to pursue careers in other industries. While job growth in the industry has been strong the past few years, there are still areas of the country feeling the pinch of a skilled labor shortage.

Demand for workers in construction is expected to grow significantly through the next decade. The Bureau of Labor Statistics project construction employment growth to be 11% from 2016 through 2026. Younger workers, who lack the skills and experience of their veteran peers, can benefit from the technology being deployed on jobsites today.

Drones

Drones are being used on jobsites in a number of ways. Drones can be used to quickly conduct jobsite inspections and identify potential hazards each day. They can also be used to monitor workers throughout the day to ensure everyone is working safely. Drones are being used to take photos of as work progresses to create as-built models of jobsites to keep everyone informed of the changing work conditions each day.

Drones are also being used to tackle more dangerous jobs, like bridge and building inspections. This won't eliminate the need for workers, but it will mean that workers will need to be trained on how to use the technology to perform these tasks.

Robots

Current robots are good at doing simple, repetitive tasks which is why we are seeing things like bricklaying robots or rebar tying robots. Once set up, these robots can work continuously to complete tasks faster than human workers without needing to take breaks or go home for a good night's sleep. Robots don't get tired from lifting bricks, applying mortar and setting them in place or constantly bending over to tie rebar.

In both these examples, humans are still needed to perform some of the work. Both still require workers to set up the robots and get them started. For the bricklaying robot, a mason is needed to oversee the work, ensure bricks are correctly placed and clean up the mortar after they've been set. The rebar tying robot still needs humans to correctly place and space the rebar before it gets set in motion.

Instead of replacing workers, most construction robots are there to aid and augment a worker's performance, enabling them to be more productive.

Autonomous Heavy Equipment

Autonomous heavy equipment, using similar technology for self-driving cars, is currently being used on jobsites to perform excavation, grading, and sitework. This type of technology allows operators to be completely removed from the machine, allowing companies to do the same amount of work with fewer workers.

These machines use sensors, drones, and GPS to navigate the construction site and conduct sitework based on 3D models of the terrain to accurately excavate and grade the site. Augmented GPS, a combination of onsite base stations and satellites, can be used to geofence the site and allow autonomous equipment to move around the site with precision accuracy.

The benefit of adopting technology like drones, robots, and autonomous or self-controlled equipment are twofold. First, within the next decade, workers entering the workforce that has grown up using tablets and smartphones their entire life, so operating these machines will be second nature to them. Second, younger workers, regardless of what field they go into, are going to expect to be using technology to perform their jobs.

Collaboration

As we mentioned earlier, a major issue in construction projects today is a highly fragmented industry. With workers, engineers, and equipment distributed around a jobsite, plus offsite stakeholders, including project managers and the customer, it can be hard to get everyone on the same page when a decision needs to be made.

Mobile Technology

Smartphones and mobile apps have made communication and collaboration on projects easier. Instead of driving to the office for impromptu meetings, firms can use mobile technology to facilitate a meeting of the minds that lead to definitive conclusions without interrupting the day's work.

Being able to communicate in real time ensures that any issues on the jobsite get resolved quickly and effectively and that every stakeholder can have a say. Integrated solutions that sync in real-time allow different stakeholders to add notes, change drawings and responds to RFIs instantly and then share that information with everyone involved with the project at the same time.

BIM

Building Information Modeling (BIM) is a process that incorporates digital representations of buildings in 3D models to facilitate better collaboration among all stakeholders on a project. This can lead to better design and construction of buildings.

Changes to the BIM model occur in real time, so any changes or updates to the model are instantly communicated to all team members when they access the model. Everyone is working with the most up-to-date information at all times. Because the schedule can be simulated, a visual representation of the construction process allows team members to plan out each phase of construction.

The type of immersive visualization made possible by VR paired with BIM will lead to better collaboration and communication. Virtual reality will also lead to greater acceptance and implementation of BIM. Most virtual reality applications being developed for the AEC industry are using BIM models as the basis to create virtual environments.

With AR, a project manager or contractor could walk through a construction site and easily view an overlay of a BIM model on top of as-built construction and compare the two. At the same time, they could be accessing checklists completing a daily report using a heads-up display. The project manager could instantly take photos or record the augmented reality walkthrough and send it back to the design team for clarification as issues arise.

Construction firms are starting to come around on tech adoption. Companies that are researching and implementing technology are reaping the rewards with increased productivity, better collaboration, and completing projects on time and under budget—resulting in higher profit margins.

It might be a tough pill to swallow, but we've gotten to the point where firms that aren't investing in new technologies and solutions are no longer staying competitive those that are strategically adopting and implementing tech solutions. Construction firms that continue to refuse to innovate are destined to die.

The Construction Industry: Poised for Constructible Change

By Chris Moor | Wednesday, March 27, 2019
The construction industry is ripe for improvement and brimming with potential. It's also expected to be a 10 trillion-dollar industry by 2020. Today, construction constitutes 13% of the global gross domestic product, yet it's well documented that productivity growth remains dramatically low. In reality, construction is emerging from old ways of thinking and challenges that span people, processes and technology.

The majority of project teams and trades continue to work in silos where data does not flow between stakeholders. Instead stakeholders are recreating work, wasting time and money, and eliminating the potential for the continuous improvement that comes with leveraging proven processes and historical project information. This creates unpredictability from project to project and unpleasant statistics for the industry, such as:

- 85% of projects are exceeding budget;
- 92% are behind schedule;
- 63% have quality deficiencies; and
- the average profit margin for an AEC firm is only around 4%.

Data and technology have the potential to drastically change the construction industry, yet technology investment in the industry is low. In a recent study,(2018 ConTech Report by JBKNOWLEDGE) more than 50% of respondents said they still use paper forms and spreadsheets.

The majority of conversations about transformation in the construction industry are focused largely on building information modeling. While BIM is certainly part of the solution, it's time to reframe the conversation and what BIM means. Construction stakeholders don't care how fancy a BIM model is, they care about having projects completed on time, with few overruns and minimal mistakes. The focus should be on processes, data and more specifically, how constructible data is shared.

It's time to take a purpose-driven approach to building construction with a constructible process that coordinates and optimizes the entire design, build and operate life cycle. A constructible process can ensure data from every stage of the design and construction phases is shared, combined and used to make more informed decisions before construction starts—and before it's too late.

The technology and collaboration platforms that can drive this kind of process exist today to:

- share data-rich constructible models from anywhere;
- share status updates and ensure project teams and field workers have the information they need when they want it, instead of when other people think they need it; and
- access libraries of managed building content to speed design and develop comprehensive models rich with data so accurate users can estimate, procure, fabricate, plan, install and commission from it.

Everything needed to move the industry forward is already here—almost.

Even with the technology to drastically increase productivity, drive collaboration and make everyone's jobs easier, the construction industry still lacks the level of progress it's capable of achieving. Why? The challenge isn't about technology or interoperability. **It's mindset.** Until the industry is ready to embrace the transformation that is inevitable, see the massive potential for data to change the way construction works, collaborate and adopt new methods of operating, nothing will change.

A CONSTRUCTIBLE PROCESS

Transforming the way construction works is no longer optional. It's critical to stay competitive with those who have already adopted a constructible process and are streamlining workflows, sharing data and using it to make their work better over time, more efficient and smarter. This constructible process is driven by three C's:

- **Constructible data moves beyond BIM and visualization and puts BIM into production.** Constructible models contain the data and accuracy needed to build, create predictable plans and drive downstream efficiencies in the field. Constructible models will enable more prefabrication, supply chain optimization and jobsite automation. However, the benefits don't start and end with builders. All stakeholders can benefit from constructible data because it offers detailed insight into how each component is to be built and therefore, how they will interact with adjacent components. This opens up collaborative potential between

those in the field and those in the office and empowers all project phases to better diagnose issues early before any physical production begins.

- **Content-enabled data drives repeatable process and transforms the supply chain.** Designers and engineers save time developing detailed and comprehensive models by incorporating digital content that mirrors real physical components and actual building products required by specialty trades on a project. That content can be either designed in-house, standard off the shelf building products or purchased through third-party suppliers.
- **Constructible content includes more than just visual accuracy.** Components can be further enriched with data to help define attributes of physical objects with actionable information such as weight, performance and installation detail. This leaves no room for interpretation. It ensures all team members are working from the same data and that the specified component was installed and simplifies the development of comprehensive models for each trade, so construction data is more useful in feeding downstream work processes.
- **Connected construction ensures information is easily shared, understood and available throughout the project.** Most contractors are aware of the dynamics that lead to disconnected workflows. It's natural for construction phases to remain insular, but it's important to break down communication barriers and encourage enhanced project collaboration. Being connected is the greatest defense against the prevailing inefficiencies that stem from data silos.

Enhanced coordination allows everyone on a project to see the progress of work being done at any given moment, and visibility into the work that will come next. Status and progress tracking by using a shared 'model' or dataset is incredibly valuable for the entire project team. For example, it allows multiple stakeholders to collaborate within and review models to avoid clashes. Engineers can quickly update models as team members are reviewing, and each project stakeholder is able to see the updated models in real time. Taken a step further, constructible models now directly drive the digital fabrication process. With sophisticated machine control and robotics in the field, models developed by engineers are now directing the earthwork and layout in the field.

Connected construction ensures the wealth of knowledge is easily accessible by those who need it and can be done though a shared database that is accessible to all team members. It also gives the potential to learn and improve based on experience and leveraging proven processes.

By integrating every phase, person and process involved in a building project—from the architect's initial concept to the final punchlist, projects benefit from enhanced utilization of project data. With a constructible process, gains include:

- data so accurate that contractors can estimate, procure, fabricate, plan, install and commission from it;
- accurate quantities, down to the bill of materials;
- the ability to re-use data and content to drive intelligence and optimization;
- predictable plans: scope, schedule and budget; and
- real-time collaboration through open data.

The construction industry is big, but is also extremely inefficient and because of these two facts, represents an incredible opportunity for transformation. The industry simply cannot carry on using decades old processes, methods, contracts and technologies and expect to improve productivity and control costs.

There are pockets of improvement in different subsets of the industry with some shining examples of progress. There are countless posts on social media, many lively discussions, conferences, white papers and opinions. But making the change will require courage, determination, top-down agreement and action.

Of course, knowing how and where to start is not always straightforward or even understood, but the challenge to the industry is to begin sharing data more freely. Adopt an open sharing platform, be more open with work and see how it improves communication across the project teams. Then, watch as project partners also start to collaborate more. The best projects are achieved by teams who communicate often and share information regularly. Contractors have access to amazing technology that can help collaborate more freely today than ever before. Take the first step and watch where it takes the company.

8 important questions to ask before implementing new construction software

By Dakota Nunley

April 23, 2019 4:21 pm
construction
It seems that construction companies, large and small, are beginning to warm up to the idea of adopting tech solutions to make their lives, and workflows, easier. While it's true just 57 percent of construction industry professionals say they're considering adopting new construction technology, annual venture capital funding for construction software has skyrocketed in recent years—jumping from just $4.5 million in 2008 to $1.38 billion in 2018—showing the increased interest.

Despite the flood of new software across construction and the field service industries, one big problem remains: not all construction software is created equal, which makes searching for, narrowing down, and selecting which apps to go with difficult and time-consuming.

That's exactly why we've put together 8 important questions to ask before investing in a particular construction software.

#1.) How long have they been in business?

One of the simplest and most effective ways to determine how legitimate a construction software is is to find out how long they've been in business. While a company being young doesn't necessarily mean you should write them off, it does suggest you should approach them with a bit more caution than a business with a longstanding history of excellence. And with 9 out of 10 tech startups failing, the last thing anyone would want is for the software company they choose to end up going out of business two months after they get onboarded.

#2.) What are their customers—past and current—saying about them?

Looking through reviews, testimonials and case studies should be another important part of your screening process. You can sift through past customer reviews on sites like Capterra, Software Advice, and the iTunes App Store. Keep in mind though, response bias usually plays a part here in terms of reviews. Meaning, most customers who respond are either totally ecstatic or had a negative experience, while the majority of satisfied customers stay silent.

Looking through reviews, testimonials and case studies should be another important part of your screening process.

To see what the construction software's current customers are saying about them, you can scan through the testimonials page or read their case studies on their website. You can also eavesdrop using social media by typing in the name of the app or company into the search bar on Twitter, Facebook, or LinkedIn, where customers often voice their experiences with the software.

#3.) Are any of your competitors, or industry friends, using them?

Hearing it from the horse's mouth always holds more weight than listening to what a company says about themselves on their own website, or what a stranger says about them on Yelp. References, recommendations, and referrals from industry friends—even competitors—is a surefire way to know whether or not the software will be a good fit in helping your company's particular situation.

#4.) Is the software mobile-friendly?

With 77 percent of U.S. adults now owning a smartphone, the meteoric rise of mobile phone usage around the United States and beyond is on full display. That's exactly why it's important to go with a partner agile enough to accommodate mobile devices. Having access to construction software on the go will help you stay efficient and won't disrupt your workflow. On top of that,

being mobile-friendly also shows the company is forward-thinking and is less likely to get left behind when it comes to advancing technology.

#5.) How will this software fit into your current workflow?

It's important to not buy software simply because it's what "everyone else is doing". Instead, software solutions, especially in an industry as high stakes as construction, should be implemented to solve real problems. Whether it's shaving off time spent on tedious tasks for your management team, boosting your bottom line, or making your job sites safer for your workers, only integrate tech where it fits into your current workflows and processes.

#6.) Is customer support an extra fee?

In a software-driven world, technical difficulties are almost sure to arise. That's why another great question to ask is whether or not customer support is an extra fee. Even after you've paid the upfront fees, many construction softwares will leave you hanging when it comes to customer support since it isn't covered by your initial, upfront payment.

Implementing a new software can be challenging, so having on-demand access to customer support to walk you through any hiccups will save your business precious time and money.

A follow-up question here is whether or not the customer support is U.S.-based. Oftentimes, to cut costs, companies hire third party agencies in India and other parts of the world to handle their incoming customer questions. In some cases this works, but in many other situations it's an added benefit to have in-house customer support that's close to the product and company itself. This will ensure you're getting the highest quality service from people who know the product best.

#7.) How long is the onboarding process?

When you're running a construction or field service company, every second counts and can either positively or negatively affect your bottom line. The longer it takes for a new software to get implemented, the longer your business goes without solving the problem it addresses. Not to mention, if an app takes months and months to successfully onboard, imagine how complex the product itself must be to operate on a daily basis, and get trained on.

Think twice about apps with free trials, as you're often expected to onboard yourself during the free trial and go from there.

That said, think twice about apps with free trials, as you're often expected to onboard yourself during the free trial and go from there. When you're trying to fold a new software into you and your employees' busy routines, having true onboarding support can help ensure you're not wasting anyone's time.

#8.) What size are the companies the software provider usually work with?

There are countless options out there when it comes to construction software, and few are a one-size-fits-all solution. Some apps are best used for smaller companies while others are ideal for large, enterprise-level corporations. Still others are scalable and have the ability to function well for a range of company sizes. Be sure to do your research and ask what size the companies are that the software generally works with, so you can get a tailor-made solution that's right for you.

Implementing new construction software can be a little scary—oftentimes, it feels like you're a gambler throwing dice at the table, fingers crossed that everything goes as planned. Luckily, today there are platforms available to help you curate the phony from the great, and questions to help guide you towards the best solution.

5 Steps for Introducing New Construction Technology to Your Projects

The landscape of construction technology is constantly changing. Each new innovation promises great rewards--save money, save time, reduce rework, and accomplish your dreams.

That is, if the implementation doesn't fail, which it often does.

According to a McKinsey report, large IT projects on average run 45 percent over budget, seven percent over time, and yield 56 percent less value than expected. But don't let that scare you from your next construction technology implementation. Successful technology implementations do yield major benefits and ensure you remain competitive in your market.

The key to a successful implementation is quite simply good change management practice. Here are the five steps you need to follow:

1. Name your pain! Clearly define the problem you are solving and the technology's business value.
2. Get executive buy-in and support.
3. Start with a pilot project and set your team up for success.
4. Execute with flexibility.
5. Set the framework for future projects.

1. Name Your Pain

Don't give in to the "shiny object!" Somebody's always excited about a new technology, but coolness factor is not a good reason to invest.

Instead, you should start with the pain and only then look for solutions including technology, not the other way around. Make sure your solution solves a problem that everyone recognizes is a pain in the you-know-what and then clearly define the benefit of the technology solution.

For example, if the senior superintendents are constantly lugging around heavy rolls of drawings that are often out of date, here is how you might define the pain, solutions, and benefit:

Name the **pain**:

- Carrying heavy drawings and running back and forth to the job-office wastes valuable time.
- Working off out-of-date plans and drawings increases risk and potential re-work.

Determine a **solution** that addresses the pain:

- Introduce mobile devices that can carry all the latest plans, drawings, and specifications.
- Incorporate a centralized document management process that makes it easy for the team to keep documents up-to-date and sync with mobile devices.

Clearly define the **benefit** of the solution for the folks who will use the technology and for the company as a whole:

- Your superintendents can spend more time in the field, suffer from fewer backaches, and save time not having to run back and forth between the job site and the office.

- Your document manager in the office will spend less time managing versions.
- Your project team and company will experience less rework from potential errors due to out-of-date documentation

2. Get Executive Buy-In

Armed with a solid business problem that you think you can solve and clearly defined business benefit, it's time to find an executive sponsor. Depending on the project, this can be local or regional leadership of your organization. This is important even if you think you're just "trying something out."

Without executive buy-in, you may find yourself fighting an uphill battle throughout the implementation. You don't want to have to go to your manager partway through and explain that you were implementing a new system without their knowledge and unfortunately something went wrong and now you need their help.

With executive sponsor at the outset, you can get help when you need it. Also, if your executives know of similar efforts in other parts of the company, they can connect you with valuable resources.

When you first approach your leadership, explain the pain, solution, and benefit. Start with the business pain you identified, and that you are confident you have a plan to fix the problem. Focus on what's in it for the leadership as well as the project team and the client. Then, define the benefits and set key performance indicators (KPI) for each stage of the implementation.

Think about what resources and support you'll need from your executive sponsor and end the conversation with an ask to ensure you have what you need to be successful.

When the project is complete, that executive buy-in pays off in other ways, too:

- By getting leadership involved early on, you are getting them invested in the project, so they will want to help see the implementation be successful as well.

- When your leadership knows about it from the start, they're more likely to reward you for it. More opportunities and responsibilities could follow.
- When your executives watch the project roll out, they'll likely want to see it on other projects and share it with other colleagues throughout the organization.

3. Start with a Pilot Implementation & Set Your Team Up for Success

To reduce disruption to the business, start small with a single project team to prove out the solution and benefit.

To choose your pilot, look at available staffing, the complexity of the job, the fit of the technology for that job's needs, and the team's readiness for change. Once you've identified a promising project, approach the team similarly to how you approached the executives:

- Start with the pain.
- Discuss what's in it for them.
- Explain why it's important to the larger business.

Make this team part of the decision and planning process. They have good information and ideas to contribute and including their input will increase their commitment to the project's success. The more your team sees how the construction technology will make their lives easier and their work more efficient, and the more they are included in the decision and planning, the more likely they will be invested in seeing the implementation to success.

In addition to general buy-in, your pilot program also needs a champion. If you're not working full time on the project where you are implementing the technology you need to find a champion who has these characteristics:

- Proactive and energetic in taking on the challenge of seeing the project through
- Possesses the appropriate technical expertise to support the effort
- Has the bandwidth to manage the roll-out (often aided by the executive buy-in)

Finally, set S.M.A.R.T. (specific, measurable, achievable, relevant, time-bound) goals with the team around the desired business benefits. Specific, measurable, attainable, relevant, and timely goals do two big things for you. One, it keeps folks focused on what's important and two, it helps you know right away if something isn't going as planned.

Pick the right team, get their buy-in, include them in the process, and set S.M.A.R.T. goals for the pilot and you'll be off to a great start.

4. Execute with Flexibility

With your entire team on board from the project to your executive sponsor, it's time to execute. There's a great deal you simply aren't going to know until you get into the project, so be prepared to be flexible and transparent.

Communication is key. Schedule regular check-ins, and track progress against your goals. If something's not working, pivot and try something else. If you're not seeing progress in your KPI's, pivot and try something else.

You should always be transparent. By sharing the project's accomplishments and failures, you build trust and improve your odds of success. The worst thing you can do is hide even the little problems.

Just as you respond to setbacks, also capture your successes, and build on them. Use small wins to build bigger victories.

5. Set the Framework for Future Projects

If you've followed the steps above, hopefully your pilot project has yielded some beneficial take-aways. As you work through the pilot implementation, it's important to capture what you've learned about the new technology and the process for its implementation.

When the pilot is complete, you'll need to make sure that valuable information doesn't get filed away with the rest of your close-out documents so that you can share it as a framework to take the technology to future projects.

Then be prepared to guide future teams in customizing your approach to work for them. Some champions build groups with other champions to extend their reach and support each other's efforts. These may be formal or informal, and

work best when they engage in transparency and have air cover from the executive team. If your company conducts webinars, cross-departmental meetings, and executive site visits, get on the schedule to share your project.

Make sure that the systems you build include the opportunity for continual improvement, so that each team can feed their experience and insight back into the program. Ultimately, you hope to have a positive impact on teams across the organization and perhaps around the world with your new construction technology.

Final thoughts

In short, taking as holistic and circumspect an approach to implementing new construction technology *before* you get started will pay off in a big way when you're ready to implement. Once you've pinpointed the problem you need construction technology to solve, integrating the broader team from the decision-making process through to execution will help to ensure a successful first implementation, and help your ongoing success as well.

6 steps for introducing technology into the workplace

People don’t like change and that couldn’t be more evident than with technology inside a workplace. Here are 6 tips for introducing technology.

By **Bev Attfield**

People don’t like change. That’s especially evident inside the workplace, particularly when it comes to technology. While some people see the immediate value of adopting new technology, many don't. Perhaps it’s the perceived difficulty of implementing a new way of working, or maybe the benefits haven’t been clearly articulated. Regardless, it’s important to carefully plan how a new technology is implemented.

Here are six tips to help you build more bridges than barriers when you introduce a new technology:

1. Make sure it’s something everyone, not just you, will benefit from

Be diligent and remain objective. Is this something that’ll really benefit your staff, teams, and organization? Or does it just seem like the right idea to meet your immediate needs?

2. Give everyone a heads up

Communicate as soon as possible that you’re investigating a new technology and outline the benefits and impact for all. Be open about how it supports and aligns with business objectives. Involve key stakeholders early to get buy in and identify problems.

3. Engage a champion (or a few)

Negativity can spread easily in the workplace. Enlist a few people at all levels to help others understand the benefits of the new technology. Show your champions the clear advantages and intended outcomes of the new solution so that they can easily vocalize and demonstrate their support. Make sure your full senior leadership team is behind the change and will function as champions themselves.

4. Provide engaging launch and training events

No one wants to sit through a boring training session. If it's done effectively, your participants won't even realize they're learning (or being asked to change). Try a lunch and learn or throw some humor into your presentation, and make your launch a celebration. Do what works best for your people and workplace culture.

5. Consider different learning styles and needs

Whether we're an auditory, visual, or a kinesthetic learner, we all absorb information differently. Tailor your training sessions to all types of learners by providing a range of learning materials and options such as documents, live training, and videos. Be available for one-on-one training for those that require that extra bit of personal help.

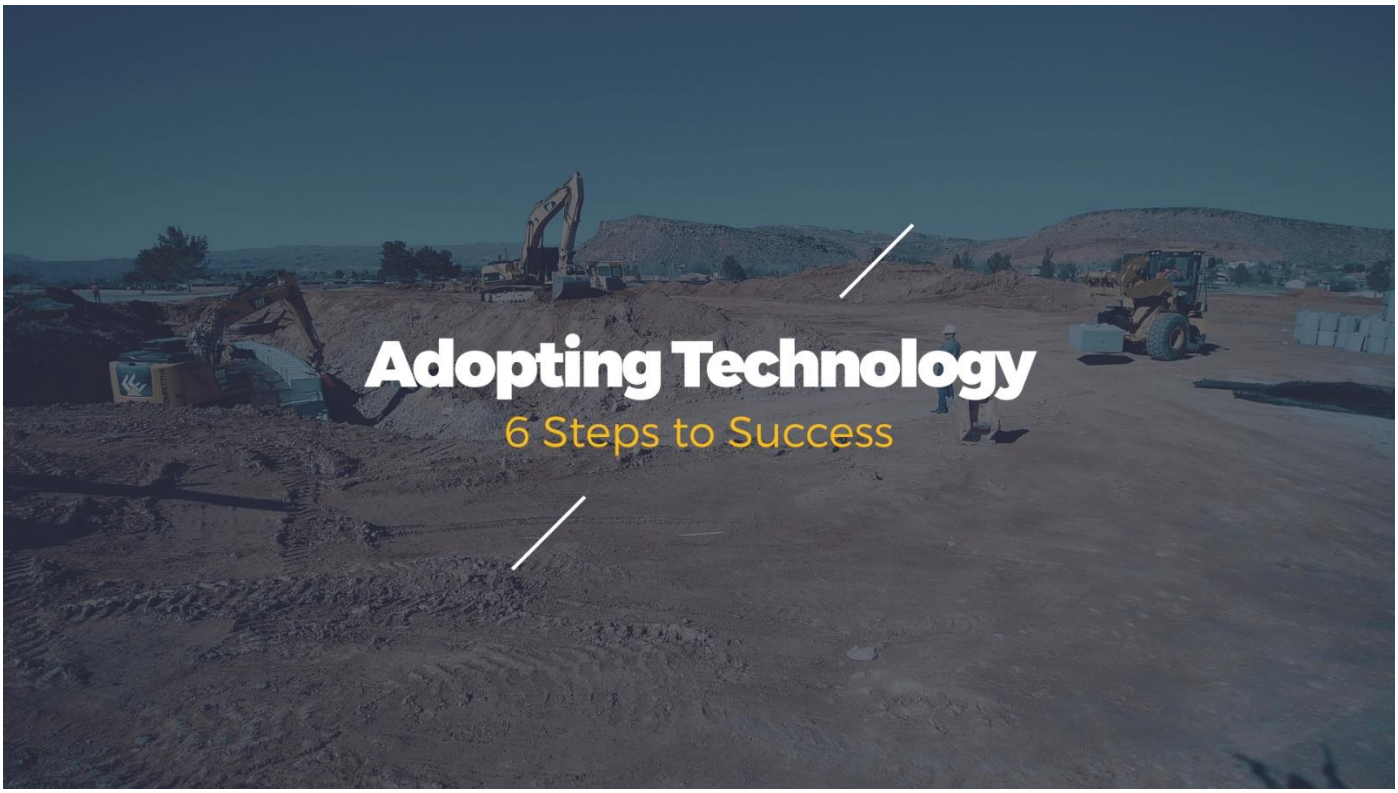
6. Make it personal

Nothing builds apathy more than employees not recognizing the personal value of a new tool. Let people know why this matters to them, and how it will impact their day-to-day work. Ensure staff understand how it will help them, not just the company. Make sure your new technology is ready to use and seeded with relevant data for all users. Help them quickly get more value out of the new system than the effort they are investing in it.

We've all experienced challenges while trying to introduce or learn a new technology. Incorporating the tips above, while trying to sympathize with those who struggle with change, will go a long way to successfully implementing your new technology. What challenges have you encountered while trying to incorporate new technology?

The 6 Step Process for Successfully Implementing New Construction Technology

Brigham Timpson | July 31, 2018



When it comes to construction, many people are wary to try and incorporate things full-bore, whether it's for financial reasons or uncertainty. However, in many places, business owners are selling themselves short. Knowing what's going on, even if you're not ready for a full-on technology investment, ensures that you can get started right away when that time does come.

TECHNOLOGY IN CONSTRUCTION

So, what may you see when it comes to future tech in construction? One of the most attractive options is the advent of robotics. Projects today will still have plenty of boots on the ground, so to speak, but Dean Banks, managing director for U.K. construction services at Balfour Beatty, believes that robotics will change things a bit. “In the future, we think that robotics will play a big part,” he said. “We see drones making decisions, we think information modeling will be in place, (and) 3D printing.”

In other cases, the tech may not necessarily be about what goes on the site, but managing what is going on to be more efficient. This is best exemplified by products like the busybusy app. Gathering data about how workers are performing or how equipment is being used isn’t anything new, but BusyBusy makes it easier to gather said information on a wider scale, with less expenditure of time on the part of management. This means less time poring through/gathering data and more time putting it to good use. Without innovations like these, many of the other technological strides in construction can’t reach their full potential.

THE INCORPORATION

Of course, the actual creation of new tech is only part of successfully using it. You also need to be able to incorporate it properly. In order to make this happen, the best way to start is by creating a rollout plan, ideally one that uses it on a smaller scale when it comes to utilizing it. For example, when you introduce the tech, start by training organization leaders, and get a round of feedback from them in order to determine where it is effective and where it may need some improvement. At this point, after addressing these points (within reason) you then want to roll it out to your teams. Again, you're going to want to open things up to a round of feedback from your team.

Why is this so important? Well, while a piece of technology may read well on paper, there's still a learning curve for your staff that uses it as well as for management to determine the best way to do so. Like anything else, you want data to determine whether or not this is best. After finding an ideal path, there's still going to be ongoing maintenance and training for new staff.This last point belies the major thing to think about when it comes to incorporating technology in construction: there's a constant cycle of reiteration and improvement. This is where it falls on you as management to make sure this is done as effectively as possible. Working with efficient technology, like the busybusy app, makes it possible to find success as you streamline your business.

THE 6 STEP PROCESS FOR ADOPTING NEW TECHNOLOGY IN YOUR CONSTRUCTION BUSINESS

There are three questions that should be asked when preparing to use a new technology in your construction business.

Whose daily life will be affected by this technology?

Who can help collect Smart Jobsite Data?

Who can provide input on potential implementation problems?

The decision to adopt a new technology needs to start at the top and move down through the organization, ensuring it meets the needs of all stakeholders.
This includes:
Owners
Head of Field Operations
Head of Job Costing
Estimators

One very important aspect of rolling out a technology to your team is the process followed to get team leaders on board.

Estimators, Project Managers, and Project Supervisors are roles who generally have influence throughout your organization.

Be sure that your leadership team understands the value, and “buys in” on the adoption of any new tech.

After getting management and leadership on board, begin moving through the key field and jobsite influencers.

This includes anyone that has a direct, or indirect level of influence among your workforce.

Crew Leaders, **Pace Setters** (Lead Operators), and **Influential Employees** should all be included in the rollout process. The better these key roles understand why and how the technology works, the easier it will be to implement company-wide.

Of course, the rollout process isn't finished once your team has access to the new tech.

There is an ongoing process of communication that includes addressing challenges and concerns.

Establishing open lines of communication sends a signal that employees are empowered toward success, and improves company-wide collaboration among team members.

In our time consulting construction companies, we've seen that "tailgate talks" and company lunches help speed up the adoption process, and improves chances of overall success.

Data is a cultural shift in your business and requires on-going attention and review.
Businesses that successfully adopt and implement great tech practices follow these guidelines.

Teach and remind your team why accurate jobsite data matters.

Every team member is responsible for accurate job-costing.

Company tech is required training for new hires.

Quarterly review of company performance with all team members.

Recognize top teams, based on the data.

Let's Build.

10 Quick Tips For Implementing A New Construction Technology

Posted by Dan Dolinar on Thu, Dec 21, 2017 @ 13:12 PM

A solid foundation for implementation will yield companywide results.

At a time of fierce competition, the distance between technical promise and genuine achievement is a matter of special concern. Faced with their regular duties, Managers experience great difficulty in closing this gap. The key challenges for managers responsible for implementing new technology include: an inescapable dual role, the range of technologies that need to be supported, resistance to change, the right degree of incentives, and the need for one person to take overall responsibility. This post offers up 10 Quick Tips For Implementing a New Construction Technology.

1. **Establish company goals and objectives.** To eliminate wasted time, efforts should clearly identify what leadership or management wants to achieve by implementing a new construction technology, or taking greater advantage of technologies currently being utilized. Objectives may include automating workflows, integrating with existing billing systems, and sharing documents with project stakeholders and vendors. Technology roll-out, vendors, features, training, and pricing are just some of the variables that need to be considered.
2. **Evaluate current work practices.** Once a company's knows what it aims to accomplish, the next step is to clearly understand its traditional work practices. It's also important to map or diagram work practices. When a process is documented, issues tend to get resolved early on. If these issues are not resolved prior to employing a new technology, the tendency is to blame the technology not root out the problem. Prioritizing and solving problems unearthed during the assessment phase allows companies to adopt and nurture more effective work practices before innovating the process.
3. **Identify leadership and develop protocols.** It is important for leadership to communicate the objectives and rationale for innovation and provide their full commitment to its success. Deciding early on the rules of engagement with office and/or field personnel who refuse to utilize company defined technologies or delay training will help to minimize disruption and tension.
4. **Identify the required functionality of a prospective technology.** With objectives and current status understood, it is time to obtain a clear picture on the specific functionality requirements of the new system. Specifying the functions upfront will minimize costs associated with shifting requirements during implementation. It is also important to determine how the company wants to drive implementation decisions in the design, training, and monitoring phases.
5. **Compare products and their customer support.** It is best to conduct an initial assessment to prevent functionality creep, i.e. increased costs without specifically meeting the project or practice's objectives. Evaluation can occur via conferences, trade shows, online demonstrations, and vendor visits allowing prospective users to "test drive" systems and identify which are best suited for the company's practices. These efforts are the groundwork needed to ensure that the products chosen will actually provide the essential tools, processes, and connectivity.
6. **Evaluate the cost and benefits.** Choosing the right construction technology for work practices ultimately gets down to functionality, ease of use, and cost. Understanding the full cost and anticipated benefits of the system is a critical part of the evaluation.
7. **Gradually roll-out the new technology.** Employees can become irritated when they show up to job site to find out their busy day is going to become a lot tougher because they are expected to learn a new technology. Let workers get a sense of system basics for about a week. Before launching into full implementation, consult with users to make sure they have what they need to be successful in the change.

8. **Train for proficiency.** Most vendors provide training programs to support adoption. The challenge is ensuring that the training supports the specific work practices; oftentimes it is not a "one-size-fits-all" application. It is important to provide customized training focussed on the processes understood by field personnel and office staff is the most effective. Training should be tailored to the user role.
9. **Measure results.** Appropriate use and adoption can be monitored with tools such as dashboards, checklists, and gap analysis forms.
10. **Document lessons learned.**

With each successful implementation, companies build a foundation of trust with their teams. It is important to implement what will work as opposed to what's cool. If implementation is collaborative, enjoyable, and useful, everyone will celebrate the success of the innovation implementation together.

What is your experience with implementing a new technology? Please share your thoughts with us in the comment section below.

Implementing New Technology: Tips for the Construction Industry

Last Updated on Dec 03, 2018 | Reading Time: 2 minutes

According to some thorough research recently published by **KPMG**, if you're in the construction industry, chances are your company is **probably a little bit behind the curve*** when it comes to the adoption of new technology (*unless you stayed at a ***Holiday Inn Express*** last night – because according to their commercials, that makes you an instant expert on just about anything).

But in all seriousness, not only is the construction industry as a whole somewhat behind other industries when it comes to new technology, given the slow state of technology adoption, **implementing new technology** in the field or back office of a construction company can be **an especially tall task**.

Some of the reasons small and medium businesses may look into technology is to both improve over current methods (whether that's paper or an outdated technology) and increase productivity. Though construction companies may be used to utilizing mounds of paper, firm handshakes, and wet signatures to do business, it's a good idea to evaluate new technology as it becomes available, and to make the determination as to whether it might be **necessary for your construction company to adopt new technology**, lest you find yourself at a **competitive disadvantage** compared to your more advanced competition.

Adopting New Technology – 4 Things to Consider

Does it make your workflows easier?

For many office managers and contractors, decreasing time translates to lower costs, increased revenue and profit. By streamlining day to day office workflows and reducing manual efforts and paper-based processes, you can focus on more important tasks and the relationships you have with your most important customers.

Does it make your company more competitive?

It's important to evaluate technology and see how implementing new software can improve your company's relationships with other businesses by facilitating more efficient communication. While a new process may be an adjustment for your customers, an explanation of your new best practices and updated business methods can soften then change. Ultimately, technology should help grow the business with new customers, improve current relationships, get more revenue in the door.

Does it help you grow professionally and do your job better?

Let's be honest, no one wants to be replaced by technology. However, as discussed in a recent article, using a tool to improve your job performance, can make you better at your job – both in the eyes of your coworkers and in terms of actual, measurable improvement. The decision to implement new technology can be a true win-win – you can get all the credit for streamlining more manual tasks which helps improve your resume, and your company enjoys the benefits of the increased, technology-enabled output.

Does it allow you to focus on more important tasks?

After talking to other contractors and office teams, they're predominantly tasked with other responsibilities not planned in their job description. By focusing on your strengths instead of menial tasks, you can do the job you were hired to do.

Paul Dean | Sales Enablement Manager

Last Updated on Dec 03, 2018 | Published on Aug 24, 2017

Strategies for Selecting and Implementing New Technology

Friday, April 7, 2017

Regardless of industry focus or years in the business, most construction professionals agree that the process of selecting and implementing construction technology can be overwhelming.

This is not only because there is so much to learn when it comes to software, hardware and the devices themselves, but also because there is a lot to learn about the technology providers and potential partners as well.

If an organization is considering implementing new construction technology, it's important to first understand and prioritize the needs of key stakeholders. This should also include identifying areas in the business that have the biggest ROI potential. In a perfect world, the organization's biggest 'pain points' match up to the greatest opportunity for ROI. In practice, companies generally strike a balance between these two realities. In doing so, companies can make calculated and incremental technology investments for the biggest impact, while exerting less risk.

By following these adoption strategies, organizations will be more prepared to choose

and deploy construction technology that will maximize monetary and time investments.

CONSIDER THE RIGHT TECHNOLOGY PARTNER

Having a trusted local partner to help implement new technology once it's selected is one of the best ways to ensure success. A premier partner that understands the design and construction processes, as well as how information needs to flow between each phase, will ensure that team members are trained properly and that the equipment is fully utilized. This gives businesses the greatest competitive advantage. The right partner will be a consultant, advising on how to optimally implement technology for the applications and workflows of the company. Not only that, the right technology partner will also keep the company abreast of current technology and new options, which helps optimize resources and cut IT spend overtime.

When reviewing technology providers, be mindful of how long manufacturers have been in business and if they're continually innovating. Startups or best-of-breed providers may offer cool apps, standalone collaboration or GPS positioning tools, but ROI may be handcuffed if that company discontinues its product line or is acquired. Choosing a technology vendor that offers solutions that span the entire construction continuum – from designing to building to maintaining a project – eliminates the hassle of integrating technology from multiple vendors down the road.

PORTABLE TECHNOLOGY IS MORE VALUABLE

Once purchased, the more often construction technology is used, the more valuable it becomes. For example, when evaluating components like GNSS machine control, consider if the technology can be moved from one machine to another independent of the machine type. Many providers offer 'kits' that make grade control systems portable, ensuring the technology is in use even if the primary machine is not. This gives contractors added flexibility and greater options when planning and executing projects. This adaptability often means fewer machines are needed onsite. Instead of transporting heavy equipment, machine operators can simply re-mount the necessary GNSS sensors and control boxes then load the local design files to begin work at another site.

AVOID COSTLY DOWNTIME

On the flip side, any time equipment is unexpectedly down, it costs money. Minimize excess downtime by selecting technology that is rugged and well-tested, with solid support options. Contractors with capable and responsive service providers should get calls returned quickly and have access to immediate on-site assistance when and if a problem arises. Ask these questions beforehand and talk to references about their experiences.

RELY ON A TECHNOLOGY CHAMPION

Having a technology champion within an organization will pay dividends immediately. Many construction professionals new to GNSS select a project manager or operator that has used the technology in the past, and is now eager to share best practices. In these cases, a technology champion can get operators excited and up-to-speed quickly. Hands-on training will help convert operators to embrace the technology. In the machine control example, operators of all skill levels will quickly realize how machine control and guidance systems make it easier and faster to reach the desired design. Customers are seeing the value of GPS grade control as a tool to help them save money, with reduced staking costs and fuel use, minimizing the amount of base materials needed. With real-world training and support, managers can quickly see how GNSS grade control saves money, reduces staking costs and fuel use, minimizing rework and saving on materials needed. Team members that are personally invested and feel ‘in control’ of leveraging the technology will improve results and drive value.

MAKE SURE TECHNOLOGY IS INTEROPERABLE

Whether an organization is considering intelligent machine control for dozers and excavators or technology to support the planning and design phases of a project, which can include everything from feasibility planning and BIM modeling, to GNSS survey equipment, UAV survey and 3-D scanning technology, it's important to consider the interoperability of each technology component. Selecting and implementing one piece of technology at a time is smart, if there's a big-picture plan that accounts for data sharing between equipment first. This includes ensuring that the infrastructure allows for easy data exchange and communication between surveyors, grade checkers, site supervisors and machine operators. When information and communication flow freely across the jobsite in real time, project workflow is streamlined and productivity gains grow considerably.

Planning and successfully implementing new construction technology is undoubtedly a complex and challenging effort. However, taking a systematic and focused approach with a trusted and proven technology partner will help organizations meet these challenges and exceed expectations. With the right implementation strategies and mix of integrated hardware, software and mobility technologies, construction professionals can achieve greater visibility and centralized control across projects and in doing so achieve maximum value from each technology investment.

Tips for Implementing New Technology in Construction

In today's technology-driven world, it should come as no surprise that many of trends in construction revolve around new technologies that will improve and enhance the building design and construction process. It's critical that construction professionals stay abreast of the latest technology trends so that they can remain competitive.

The Key to Successful Implementation

A business case must be made for bringing construction technology solutions onto projects. Since every job is different and requires different levels of technology, it's important to make sure the solution fits the problem. Companies must think about the following:

- Selecting the right technology to solve their problem
- Engaging all leadership with the new technology
- Ensuring the team is on board with the process
- Consistently following a specific implementation process across the board

Keep an Eye on the Competition

Construction companies that are already embracing and using the latest technology will often find themselves outpacing their competitors. Having better and more advanced technology in place will better serve your customers. In turn, they will respond to the company that can offer them superior customer service which translates to faster project completions, reduced costs, and improved quality.

Select the Right Technology

The most successful companies typically have both formal and informal processes in place to ensure innovative software and hardware systems are continually identified and implemented into their processes.

Usually, larger companies will already have some technology in place. This could be a specialized program or an application specifically intended for use in the construction industry, for example. Because they already tend to have technology in place, integrating new technology with their existing systems can become a challenge for larger corporations.

With smaller to medium-sized companies, understanding pain points is the key to vetting and adopting new technology. Once the company's processes are evaluated and their pain points are identified, they can select technology that will help them to streamline their business. Companies will then see an increase in their efficiency and productivity.

Although new technologies are increasingly being introduced into the construction field, many construction companies may not be taking full advantage. If construction professionals want to drive performance, increase productivity, and decrease risks, it's imperative they find a way to implement new technology to ensure they can effectively compete with their competition. If you haven't already, read part one for more implementation tips.

Engage Your Team

The construction industry is known to be complex and slow when it comes to adopting new technology. When leaders lack an urgency to bring about transformative change to their business, this can trickle down to their employees' receptivity of technology. Engaging the team across the board is the key to getting everyone excited about the adoption. It's also important to study the users of the technology (manager, contractors, etc) to see how they interact with the system and how it can improve the way they work as well as their areas of difficulty.

Train Your Team

Training is essential to the success of new technology. Training should be continuous and mandatory. Ongoing training will help you keep up with needed updates and readjustments. Users need to understand why training is important and the impacts it will have on their work. If necessary, lean on the technology vendor to facilitate training as well. You may select the technology based on its capabilities but without understanding things such best practices for using the product or having an expert readily available to address concerns can lead to user error and an unsuccessful implementation.

Identify Key People

At times, new technology implementation should be done on a smaller scale. In order to reduce business disruption, select a project team and test out the new technology to get an idea of the benefits, the potential problems, and the solution to hiccups. Once you identify this team, select a dedicated employee to own the implementation process. This employee must be the advocate for the new technology, the main point of contact for the vendor, and one who can successfully engage with the project team and report results to key executives.

Implementing new technology in an organization

February 4, 2019

Today's business environment embodies the phrase "survival of the fittest." As in, if your organization isn't as productive and efficient as it can be, you'll be left behind.

Introducing new technology in today's digital world can help you remain competitive.

That's not all though, the effectiveness of your solution depends on how you choose to implement it. If your employees don't use the new tool, you won't realise any of its benefits.

Fret not, with careful preparation, effective support, and defined end-goals, you can make your technology roll-out a success.

Step 1: Work from the ground up

Before you introduce new technology, you should evaluate if it would be a good fit for your organization.

Think of why you need the new tool. Will it boost productivity, reduce cost, or improve processes? Will it compliment your workforce?

For example, to improve collaboration with your frontline employees, implement a mobile-first communications platform instead of a desktop-reliant intranet.

Step 2: Use a framework

An MIT study[1] revealed that 63% of managers believe the pace of technological change in their workplace is too slow.

Which means successful implementation needs a framework that revolves around a sense of urgency.

We recommend a SMART goal framework:

Specific: Your initial goal must focus on clearly defined metric

(eg: engagement with the technology).

Measurable: You should have a way to measure that metric. (eg: number of employees using the technology daily)

Aspirational: You should set a target that pushes you beyond what you're already achieving (eg:"more than 50% of employees should use the technology daily")

Realistic: Keep your aspiration in check with what you can reasonably expect to achieve with the resources that you have. (eg:"training will take two weeks, let's not expect everyone to start using it from day one")

Time-bound: Your goal must have an end date.(eg: "by next month, next year")Here's what the framework would look like in action:

During the trial period (from January 8th, 2019 till February 8th, 2019), all departments in XYZ Corp. must utilize XYZ software.

Template:

By/From [date], the [organization, department, group] must [insert metric] until [timeframe].

Step 3: Present change to multiple teams

Now that you've identified your end-goals and metrics, you can start educating your teams about the technology.

Select employees who have the right personality and enough influence to promote the tool. Make them your 'technology champions.'

How do you identify 'technology champions'?

Behavioral science studies[2] show that there are two kinds of people that make for good leaders (or ambassadors).

Opinion leaders aren't necessarily technically-skilled, but usually are in a position of seniority/experience and trusted by their peers.

Technical leaders are employees with superior technical skills, whose opinions are compelling for coworkers.

Note that presenting the tool to individual champions requires a tailored plan. For example, the VP of the company may ask you about the financial and strategic advantages, whereas a warehouse manager will be interested in how quickly the technology can be learned.

Once your champions are onboard, ask them to emphasize how the tool can solve current problems when they present it to other employees.

When your workforce realizes the personal benefits from the solution, they are more likely to accept it.

Step 4: Provide productive support

Providing support and training is necessary during the early stages of implementation.

We recommend using online manuals and digital help centers because your employees can learn the technology at their own pace.

Lack of support risks your whole operation falling apart.

When your staff understand how to use the technology before launch, they will feel prepared and be more likely to use it.

Traps to avoid

1. Reckless Promotion

Promote the new technology precisely and accurately. If you over-promise, the solution will fail because it does not live up to user expectations. If you under-promise, your employees won't use the technology because they won't see its benefits.

2. Impulse to rush

Rushing implementation means employees will be unclear about the technology's features, and the problems it solves — all of which leads to low adoption rates and disengagement.

Step 5: Prepare for resistance

Learning new technology is a step out of a comfort zone, and there will always be a group of people opposed to it.

Think about it, your teams have been using specific processes and workflows for years.

How do you convince them that the new way is better?

Address resistance early as letting negative feelings develop can create a counterculture.

Resolve concerns by collecting feedback through an anonymous survey right after you've presented the technology.

Sample questions to include:

- Do you understand the pain points the technology solves?
- What feature are you excited to use?
- What part of technology looks most complicated to you? What looks easiest?
- Do you have any questions or concerns?

Conduct another survey when your users become more familiar with the tool and can share more details about their experience.

Sample questions to include:

- Was there enough training provided during the onboarding process?
- What part of training could be improved?
- Has the technology successfully solved the pain points you expected? If not, why?
- Which feature do you use most? Which feature do you use least?
- Do you have any other comments, questions, or concerns?

Introducing new technology is not a one-time event – it's a process. So, plan for every stage and be transparent about why the tool is needed. Once the benefits are clear to your employees, you'll notice high user adoption and enjoy the benefits of digital transformation.

Sources:
1 — sloanreview.mit.edu
2 — hbr.org