

The Dollars and Sense of Mobile Construction Apps:

How to Calculate the Return on Investment from Construction Mobility

Mobile construction apps are providing a substantial return on investment. Learn how you can save time as well as labor and rework costs to improve your bottom line.



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The New Drive from Bricks to Bytes: Why the Construction Industry Is Embracing Technology

Although it isn't uncommon to see a laptop alongside of a hard hat at a job site these days, a misconception still exists that the construction industry is reluctant to adopt technology. While it's certainly true construction is still one of the "least digitized" industries and is ripe for digital disruption,¹ technology is actually on the rise in the construction industry, with a majority of construction companies deploying an array of technologies across the project lifecycle, including design, construction, and operations:

- Drone monitoring and simulation
- Equipment/material connectivity and tracking
- Robotics and automated technology
- Mobile technology, platforms and reporting
- Project information and encryption
- Integrated real-time data analytics
- Building Information Modeling
- 3D printing

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I got into construction decades ago because you didn't have to be a rocket scientist, only to find out that now, you have to be a rocket scientist to be in construction.

— James M Benham, IT Specialist and CEO of JB Knowledge



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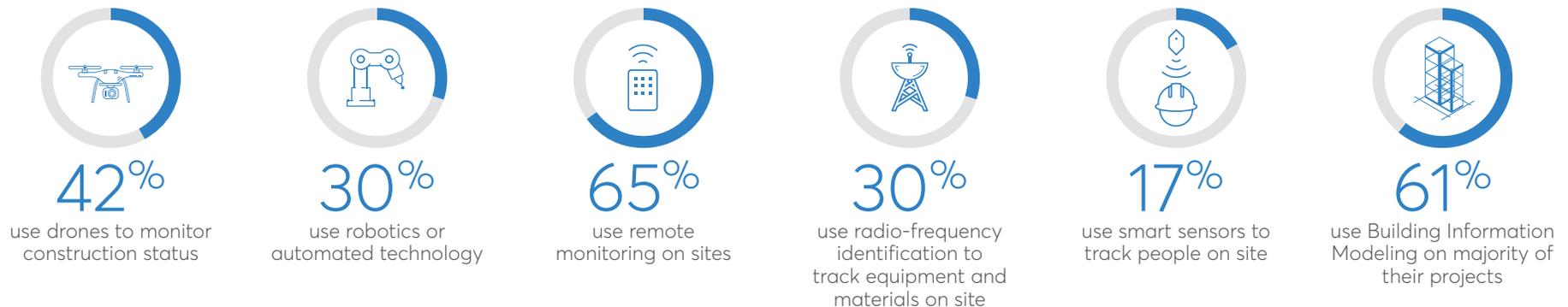
Technology is not only on the rise, but today's construction companies are also increasingly adopting leading-edge technology innovations, such as remote monitoring, drones, robots, and automation (16). Undoubtedly, we're witnessing our futuristic vision of the construction industry becoming a reality.

Drones, who can work 24/7 unlike humans, are already hovering over jobsites, capturing details from remote or dangerous areas, making construction sites safer for humans while providing automated computer systems immediate access to mission critical data.

If you take a walk around a megaproject, you'll probably catch a glimpse of robots drilling, digging, or performing an array of tasks faster, safer and with more accuracy than a human being. In this sense, we're now replacing our original myopic image of the computer as a "futuristic" construction technology, and we're quickly replacing it with printed rooms and self-assembling buildings—that is, with a new image of the construction industry empowered by the progress of technology.² In short, we're the closest we've ever been to realizing the promise of automated construction through digital transformation.



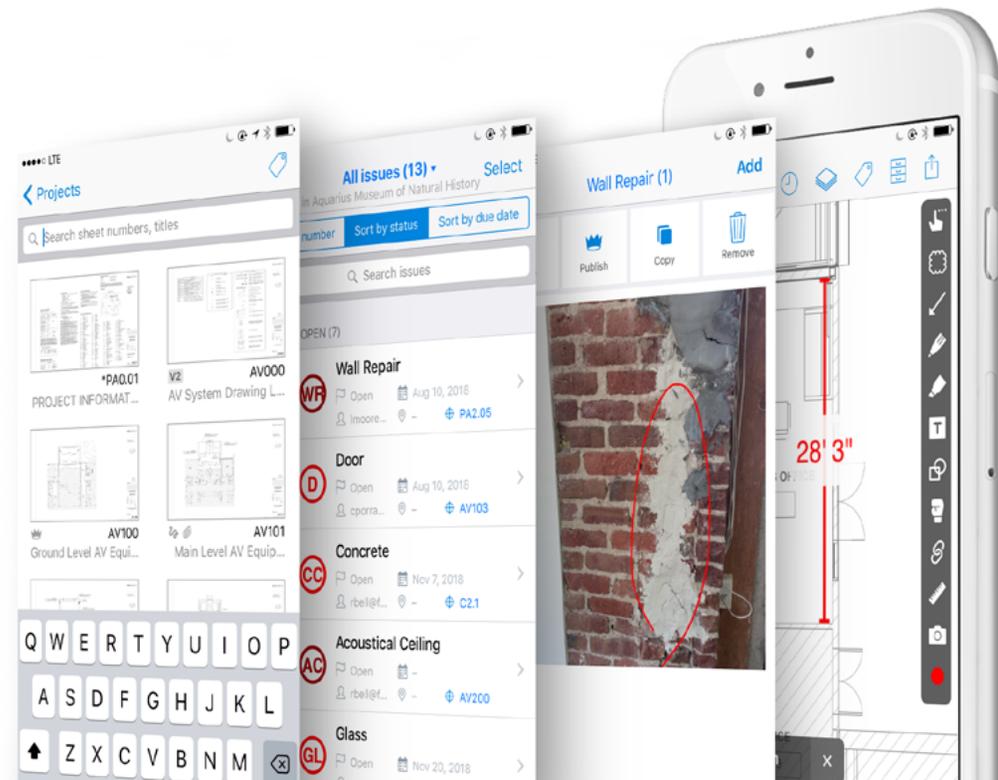
Construction is embracing technology innovations



The Dollars and Sense of Mobile Construction Apps: How to Calculate the Return on Investment from Construction Mobility

While traditional construction software has failed to solve construction's "intractable productivity problem," mobile technology, in contrast, solves the two primary pain points driving the construction industry from bricks to bytes. Mobile construction apps not only reduce risk and help construction professionals maintain their bottom line, they also help teams communicate and share documents both in the field and office. In this respect, when widespread adoption of mobile construction apps occurs within an organization, construction professionals can expect to see substantial benefits and a high return on their investment.

In the remainder of this guide, we'll demonstrate the "dollars and sense" of construction apps—the high return on investment construction professionals can expect to achieve from mobile technology. We'll also show you how to craft a strategy to increase adoption within your organization as well as provide a method for determining the ROI from your investment in mobile construction apps so you can get the budget approval you need.



Why You Need a Mobile Strategy, Not Just a Technology Strategy

We're on the edge of a mobile revolution in construction. With widespread adoption of technology across the industry, construction companies can't afford to opt out of technology today. But having a technology strategy is no longer enough. Although technology and software are now prevalent in construction, the industry continues to suffer from persistent challenges, such as skilled-labor shortage, fragmented teams, high competition, tight margins, and increased risk—all of which can be remediated by increasing productivity.

Construction productivity as a whole has been declining steadily for decades and is lower now than it was over 50 years ago.⁴ With industry productivity in decline, it's safe to say that few construction companies are seeing an adequate return on their investments in technology.

A recent global construction survey by KPMG confirms that despite substantial investments in innovation, the construction industry is "struggling to reap the full benefits of advanced data and analytics, drones, automation and robotics."⁵

However, in an environment where construction projects are (or will soon be) assembling themselves and rooms will be printed rather than "built," mobile apps are no longer viewed as a fad in construction and are quickly becoming commonplace. Smartphone usage is expected to increase from 2.3 billion in 2017 to almost 3 billion by 2020 with 77% of Americans now owning a smartphone.⁶ Deloitte also reported recently that the average mobile user checks their phone 85 times a day.⁷ Although they are still less common than a smartphone, tablets have also become "highly common in a very short period of time" with nearly half of the public now owning a tablet computer.⁸

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Yet, despite substantial investments in innovation, the construction industry is struggling to reap the full benefits of advanced data and analytics, drones, automation and robotics.

— KPMG, Global Construction Survey 2016



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More importantly, mobile usage by the construction industry is actually keeping pace with usage by the general public. According to a 2015 survey of more than 1600 decision makers, which included respondents from the construction industry, 36 percent of firms said more than five mobile business apps were used and 69 percent of participants saw value in integrating them with mobile devices and tools.⁹ James Quigley, CEO of Canvas, confirms this assessment, suggesting that construction firms are using multiple mobile business apps and deploying them to their mobile workforces at astonishing rates:

This is an indication businesses of all sizes are shifting from expensive, resource-intensive custom app builds to cloud-based mobile business app solutions. The survey results also reaffirm that when construction firms are able to easily share and learn from data collected via smartphones and tablets across the mobile workforce, the cost savings and productivity benefits can be significant.¹⁰

Indeed, unlike traditional construction software, mobile construction apps have the power to transform your construction business by converting downtime to productive time, removing inefficiency with real-time communication and collaboration, and increasing access to data for better decision-making. In this respect, mobile construction apps are the most expedient way to increase efficiency. By saving you time and improving collaboration, mobile apps will make your business more profitable.

“

The construction industry is entering the “Mobile Revolution,” in which apps are becoming an accepted means for workflows.

— JB Knowledge, 2016 Construction Technology Report



The Benefits and ROI of Mobile Construction Apps

With builders now embracing technology and mobile construction apps becoming pervasive on the jobsite, one thing becomes clear: construction professionals see the need for technology, but they're having trouble understanding the return on their investment in technology.

Although construction mobility is an expense, it's an expense that comes with a substantial return, in terms of benefits to your overall productivity, employee and client satisfaction, and risk mitigation, as well as a tangible return in savings from labor costs, downtime, and schedule acceleration. As you think through your own mobile strategy, here are just a few of the important benefits you should consider.

Save Time

Time is the biggest waste on a construction project and a primary cause of project delays that result in cost overruns. With mobile construction apps, construction professionals no longer have to waste time trudging back and forth from the jobsite to the trailer or waiting for revisions to get distributed. Indeed, after reviewing numerous studies conducted over a 30-year period documenting levels of wasted time in construction activity, one meta-analysis concluded that an average of 49.6 percent of time in construction is devoted to wasteful activity.¹¹

But mobile construction apps, such as construction productivity software, can reduce time waste, allowing builders to focus on what they do best—build. In some cases, mobile construction apps can accelerate project schedules allowing construction firms to deliver ahead of schedule.

Automate Administrative Tasks

Mobile apps can improve overall project efficiency by streamlining time-consuming tasks like job costing, crew allocation, scheduling, invoicing, daily progress reporting, and timesheet processing. For example, mobile apps allow supervisors to keep track of employee-time data, significantly improving accuracy and reducing processing costs.

Supervisors can also use mobile devices to send employee time-data wirelessly to the field office. Ultimately, by using mobile solutions, workers are freed from time-consuming data entry or even paper reporting. Your firm's organization and overall productivity will increase when your staff spends less time on data entry or tracking down missing paperwork.



Improve Communication and Collaboration

Many projects experience cost overruns that can largely be attributed to unnecessary downtime or delays. Time waste and delays are often a byproduct of inefficiencies that can be virtually eliminated with real-time communication and collaboration enabled by mobile construction apps, which can go where your team does. What's more, notifications can prompt workers to take action or alert them of changes, eliminating idle or downtime on the jobsite. In short, your team is just a tablet or smartphone away from being able to access and communicate project information that will reduce time waste and increase efficiency.

Increase Visibility and Reduce Risk

Beyond eliminating manual work by automating routine administrative tasks, mobile solutions help construction professionals to improve workflow as well as workflow analysis based on accurate real-time data. For example, you can enter updated data in accounting and payroll systems and view the overall performance of the company as well as the progress of each project. In short, mobile technology allows builders to have more visibility into their projects so they can maintain control and reduce risk.

Eliminate Rework

Mobility improves communication and collaboration. One of the most common causes of rework is poor communication and error from lack of document control. 65% of construction professionals say the biggest problem they face is the cost of doing rework¹² and the median cost of rework due to poor document control costs the U.S. industry \$4.2 billion a year.¹³

Mobility keeps the field and the office employees connected and everyone updated with the latest project information and its workflow. A good mobile construction app will help you dramatically reduce rework because every member of the team always has the most current set of documents on hand.



Reduce Paper and Printing Costs

Exorbitant printing costs continue to be one of the major expenditures for construction projects. Construction expert Houston Neal calculated that on average 37 million blueprints are printed every year.¹⁴ Depending upon the size of your project, printing costs could set you back anywhere from \$1500 to well over \$1M. This means that the right mobile construction apps can help you experience dramatic savings and eliminate unnecessary costs.

Improve Accountability and Mitigate Disputes

Traditional “paper” project documentation causes a lot of confusion on the jobsite that results in errors and leads to disputes, including indecipherable notes, inconsistent records, or missing or damaged reports. But mobile construction apps can help ensure better accuracy and accountability through time stamps, electronic signatures, GPS tracking, and photographic or video recordings. The best mobile apps will allow you to see who did what, where, and when. In the case of disputes or litigation, mobile construction apps can help you easily recall information.

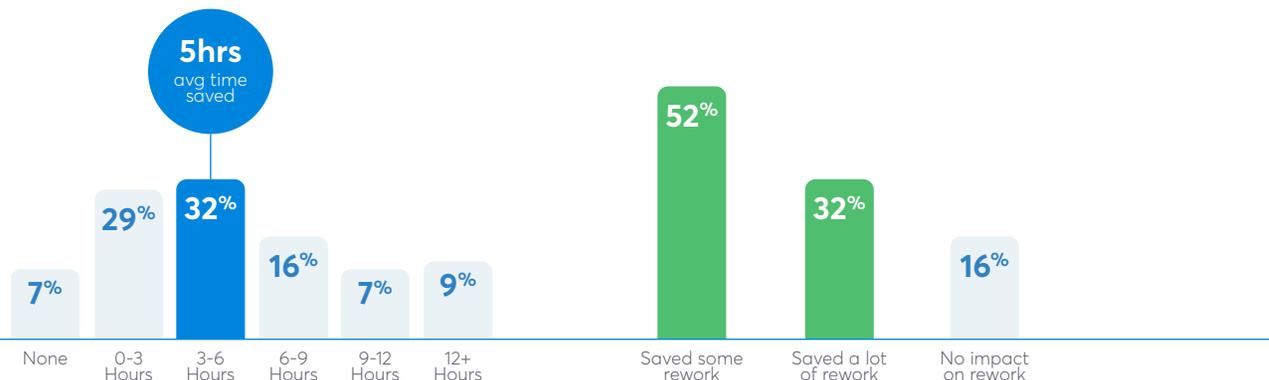


What could your team achieve with 5 extra hours a week?

How much could your firm save by reducing rework or completing a project early?

In a survey conducted with over 800 responses from PlanGrid's customers, a maker of construction productivity software, they found substantial benefits in labor cost savings and rework reduction:

Time Savings: 32% of respondents claimed they saved on average 5 hours per week, with some clients reporting as much as 12 hours of time savings a week.



How can you calculate the value of your guys having the right information all the time? It's just incredibly valuable that they do.

– Kim Lorch, VP and Area Manager of The Raymond Group's Las Vegas division

Rework Reduction: 84% of respondents said it helped them reduce rework, with 32% saying it reduced a lot of rework



Case Study Project: Las Vegas Arena

In 2014, The Raymond Group, a top interior and exterior contractor in the US, was tasked with completing all of the metal framing, drywall, and painting as well as the exterior and plaster work for a \$450M Las Vegas arena similar to Staples Center in LA.

Problem:

Large projects are notorious for cost and schedule overruns. 77% of megaprojects are at least 40% late. With such a large project, the Raymond Group needed to improve team communication and information sharing to ensure they completed the project on time.

Results:

By using PlanGrid, a mobile construction app, they were able to achieve two common benefits of mobile construction apps: labor savings and schedule acceleration.

- 60 hours of labor cost savings per week
- Project completed ahead of schedule

[Read Full Case Study](#)

Best Construction Mobile Apps By Major Category

Mobile construction apps are rapidly transforming the construction industry and therefore have a great potential to transform your construction business. However, as mobile apps begin to proliferate, it can be difficult to ascertain which technologies would be the most beneficial for your business with its unique challenges. To help you sort through all of your options and determine which apps will work the best for your team, we've put together a list of the best construction mobile apps in the top emerging categories.

Top Construction Productivity App

25 percent of projects slip by over 20 percent and 25 percent of all project costs grow in the field by over 30 percent. These percentages increase when you take into consideration megaprojects, 98 percent of which "suffer costs of more than 30 percent." Indeed, a whopping 77 percent of megaprojects are at least 40 percent late. Inefficiencies, such as schedule slip and project growth, are the biggest contributors to job overrun, impacting schedules, budget, and labor productivity that result in an average cost increase of 80 percent of original value.

While many factors contribute to cost overruns, the primary factor is low productivity. The good news is that with construction productivity apps, builders can eliminate time waste and increase field productivity by improving communication and collaboration.

PlanGrid

Achieving widespread adoption of technology is usually the biggest hurdle for most construction companies, but [PlanGrid](#) was built especially for field use, making it easy for those who aren't tech-savvy to learn and use. PlanGrid's construction productivity software allows teams to collect, manage, and collaborate in real-time on drawings, submittals, markups, photos, issues, and RFIs. PlanGrid improves productivity in enumerable ways, by reducing trips to the trailer and time expenditures, allowing teams to complete field measurements with ease instead of surveying, and enabling document control that reduces costly errors and rework.



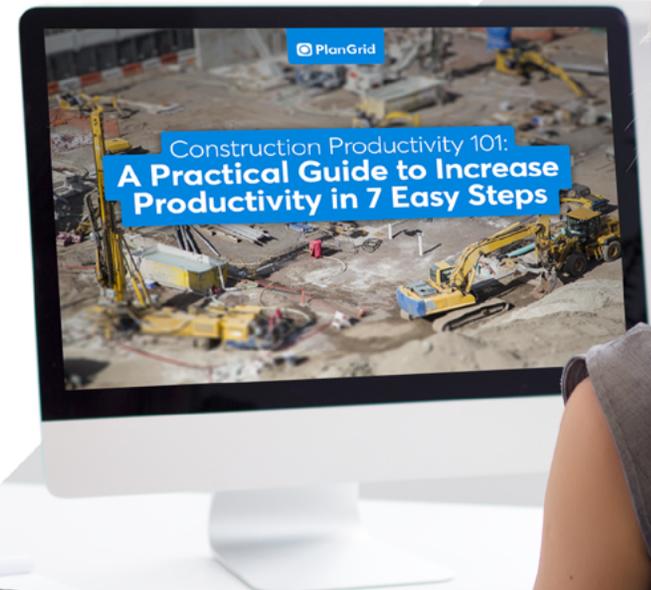
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While many factors contribute to cost overruns, the primary factor is low productivity.

**Construction Productivity 101:
A Practical Guide to Increasing
Productivity in 7 Easy Steps**

While many factors contribute to construction project cost overruns, the primary factor is low productivity. In fact, construction is one of the few industries that is less productive now than it was 50 years ago. Low construction productivity costs the U.S. global economy \$1.6 trillion a year. As costs from inefficiencies continue to soar, the construction industry must make productivity a priority. Download this ebook to learn the seven best ways to complete projects faster, reduce costs, win more bids, and increase profits.

[DOWNLOAD GUIDE](#)



Top Construction Project Management App

Managing multiple projects across multiple jobsites can be a difficult task. Each project has its own costs, schedules, and documents—and each project its own delivery process, including planning, design, procurement, construction, and operations. For these reasons, a majority of construction professionals are currently using mobile construction apps to help them manage projects.

Project managers can collect field data as well as record important project information with mobile devices. Mobile project management apps help streamline the workflow and improve communication on the jobsite, which can accelerate schedule delivery and reduce costly mistakes.



eSUB's construction project management software was built specifically for subcontractors. Their mobile and cloud project management software connects the field and office in real-time.

[eSUB](#) integrates tightly with PlanGrid, so you can save snapshots of drawings and annotations to eSUB documents and synchronize your RFIS between the two applications, for a complete record of what happens on the job site.

Top Cad /BIM Mobile App

Design information used to be restricted to paper, making it difficult to access, but mobile apps now enable project teams to access and alter design plans from any location.

These mobile apps for BIM also make it easier for teams on the jobsite to collaborate with architects and owners on any changes or adjustment by enabling project teams to record important information about project materials and design. What's more, by leveraging 5D modeling, teams can now even see how design changes will impact cost and labor.

GRAPHISOFT®

A great BIM viewer mobile app is BIMx from [Graphisoft](#), which is free on both Android and iOS devices. BIMx essentially allows users to upload a 3D drawing and explore it. Construction companies can use BIMx to illustrate to customers what they will get and why they should sign a contract, show workers on the jobsite how the end result will look to guide them while they perform the work, and solicit important feedback from workers and supervisors about an issue by referencing the drawing.



Top Photo Mobile Apps

Before the advent of smartphones and mobile technology, to get accurate project progress reports builders had to rely on written documentation and/or buy expensive equipment to reliably capture accurate real-time activities of work-in-progress. But the best and most complete construction site reporting features both written and visual records and the right mobile construction photo app will not only enable you to capture and document small details or large aerial views of a project, but also enable you to incorporate photos into documents, do “field captures” of various locations that can be added to smart document programs, and view real-time dashboards showing progress from multiple job sites at once.



While there are many mobile construction photo apps, to get a complete and accurate assessment of your project’s progress, you need a view from the top. [TrueLook](#) uses drones to take aerial photographs of jobsites. The app deploys drones manned by professional pilots who are trained to photograph and video your work. In days, your app will be populated with 20 or more high-res aerial images and an edited video for you and your customers to review.

Top Time Entry Mobile Apps

Time tracking used to be a nightmare before mobile technology. With mobile time-tracking apps, companies can track time for each employee on each job site while streamlining the approval and payment process. Not only do mobile time tracking apps allow workers to clock in and out from their mobile devices, but supervisors can use those apps to verify that workers were on the jobsite during that time with GPS tracking. These apps reduce payroll errors and ensure companies don’t pay for work that wasn’t completed. With mobile time tracking apps bookkeepers can say goodbye to handwritten payroll and login to desktop software to see all tracked time.



[TSheets](#) is one of the best mobile time tracking app on the market. With the simple touch of a button and easy-to-use graphical interface, employees can clock in, clock out, take a break, submit PTO or timesheets, change tasks, and track GPS coordinates—all in seconds. Recorded time sheets can be easily exported to QuickBooks.



Top Mobile Cloud Storage

It's critical for construction teams to be able to save important project data—such as blueprints, contracts, and reports—in a location where others can quickly access it. Cloud-based mobile technology allows them to store those documents safely and access it easily, which improves communication and collaboration. Cloud-based file storage and sharing makes construction teams more efficient and less likely to make costly mistakes as they are able to access everything they need right from their mobile devices.



Box for Construction gives architectural, engineering, and construction firms a simple and secure way to plan, design and undertake projects. With Box, firms can intuitively share blueprints, photos and construction specs on any device, getting projects done on time and on budget. Used in tandem with productivity apps like PlanGrid, Box simplifies coordination and troubleshooting for workers in the field. Snap photos and video of work sites or safety hazards and share securely using Box.

Top Safety Mobile Apps

Safety is a primary concern in the construction industry because it's one of the most dangerous industries to work in. In fact, construction tops the list for the most deaths by industry sector for the 2015 Census of Fatal Occupations, with 937 deaths in 2014—beating out even transportation and hunting.¹⁸ Mobile safety apps not only save lives, they can help you save money and increase your profit margins because safety accidents are a major cause of delays that result in costly schedule overruns.



Being able to deal with injuries swiftly and accurately on the jobsite may mean the difference between completing your project late or completing it early.

With the [Red Cross First Aid](#) app, safety managers and other supervisors can get expert advice on almost any medical emergency, including broken bones, strains and sprains, and wounds. Packed with comprehensive resources like videos, quizzes, and step-by-step instructions, this app can help almost anyone on the jobsite provide accident victims the treatment they need in an emergency.

Overall, construction mobility is revolutionizing the way construction teams work by increasing productivity, automating important workflows on the jobsite, and improving communication and collaboration.

How to Calculate the ROI of Construction Apps

Okay, you're an innovative construction company thinking of purchasing a mobile construction app. Now that you're aware of all the options and the benefits of each of these apps, you'll want to seriously consider what kind of return on investment you'll get. The ROI from mobile construction apps can be quite substantial depending upon what apps you purchase and what goals your company has. While each project is unique and each team has its own specific challenges and pain points, we've provided a 5-step process to help you calculate the return on your investment in mobile construction technology:

1. **Establish benchmarks**
2. **Determine total implementation costs**
3. **Identify benefits**
4. **Translate those benefits into dollars**
5. **And calculate your ROI**

Step 1: Establish Benchmarks

To get started calculating the return on your investment in mobile technology, you need to know what success looks like. Generally you need to ask some basic questions that fall into two categories: objective and subjective. Are you interested in improving productivity throughout your organization or are you simply interested in reducing error and increasing quality?

Whatever your goals are, make sure you include goals that are clearly measurable so that you can accurately calculate success and return on investment. Most construction firms include objective benchmarks, but fail to include subject ones. Whatever those intangible benefits are, make sure you take the time to sit down and think about what these things are worth to you, even if you can easily translate them into savings or other benefit.¹⁹

Step 2: Determine Total Implementation Costs

After you've established your benchmarks by asking the right questions, the next step is to determine your total implementation costs by tracking and analyzing both your direct costs as well as your indirect costs. By direct costs, we're referring to the direct costs of construction mobility and any related infrastructure. Indirect costs aren't just initial setup costs. They're also weekly implementation costs or time you'll spend per week on training or other tasks to use the app, such as uploading files.



Step 3:
Determine Benefits

Now that you've figured out your total costs, both direct and indirect, you're in a much better position to determine your benefits. However, similar to establishing costs, you'll need to think through a series of questions to best determine your costs.

Step 4:
Translate Construction App Benefits into Real Dollars

Okay, so now you know how much your team's productivity improved or time you've saved. But what do those benefits actually mean? How do you translate the benefits from mobile construction apps into real dollars? While there is no standard way to calculate it, a good model will include:

- Cost savings from reduced site supervision personnel needs
- Cost savings through earlier delivery
- Cost savings through less rework

Step 5:
Calculate the Return on Investment

Once you have a good idea about how much cost you're saving from labor and rework reduction, it's time to translate those dollar amounts into an accurate ROI metric. That's right, it's finally time to translate savings from quality improvement, delivery acceleration, and labor efficiency into return on investment. The key takeaway here is that ROI can be calculated differently depending on how a construction firm decides to translate cost savings resulting from productivity improvements. There is no "right" way to do it.



Key Questions to Ask to Evaluate ROI

- How are we using the tools?
- What's changed from before?
- What value does the tool add to the bottom line?
- How do we translate value into dollars?



Conclusion

Despite a common misconception, the construction industry is embracing technology. In fact, mobile construction technology is no longer a fad and is actually revolutionizing the way we build.

Mobile apps are enabling a myriad of innovative construction companies to experience significant benefits that translate directly into substantial return on investment. By adopting construction mobile apps, you can achieve substantial benefits by saving time, improving collaboration and planning, automating administrative tasks, and mitigating risks to increase your profit margins.

There's no better time than now to start adopting mobile technology into your workflows. Construction companies have already started to adopt mobile technology. Don't get left behind. By doing so, you'll see dramatic savings in labor costs, time, and rework that will positively affect your bottom line.

Welcome to the construction mobility revolution!

See a Live Demo

or give us a call at +1 (415) 429-1227

PlanGrid construction productivity software is the easiest and most cost-effective way to get substantial return on your investment in construction mobile apps. By using PlanGrid you will:

- **Complete projects faster:** 90% of project costs occur in the field not the office and most can be attributed to time waste or delays. With PlanGrid, you can reduce wasteful trips to the trailer and time delays while eliminating costly rework with faster collaboration and communication.
- **Reduce costs:** PlanGrid allows you to optimize productivity in the field, which eliminates time waste that causes project overruns. By completing projects early or on time with PlanGrid, contractors will benefit from reduced costs.
- **Win more bids:** The best way to bid more competitively is not just to track costs so you can provide more accurate estimates—it's to improve your overall productivity. PlanGrid's construction productivity software will allow you to increase productivity so you can reduce costs and win more bids.



Try PlanGrid for Free



There is a reason why PlanGrid is not only the #1 construction app, but also the highest rated. With PlanGrid construction productivity software, you can streamline document management, access all project information from any device, and seamlessly collaborate within teams.

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Used on more than 500,000 projects around the world, PlanGrid is the first construction productivity software that allows contractors and owners in commercial, heavy civil, and other industries to collaborate, collect, and share project information from any desktop or mobile device through the entire project lifecycle.

PlanGrid increases project efficiency by streamlining document management, providing construction teams with easy access to all project information from any device, and enabling seamless collaboration within teams.

Guide Author:

Lynn Langmade

Director of Content Marketing, PlanGrid
[@llangmade](https://twitter.com/llangmade)

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United States
+1 (415) 963-4088
www.plangrid.com

Australia
AUS 1800 316 406
www.plangrid.com/au

United Kingdom
+44 (0) 20 3695 0292
www.plangrid.com/gb

Canada
(800) 646-0796
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