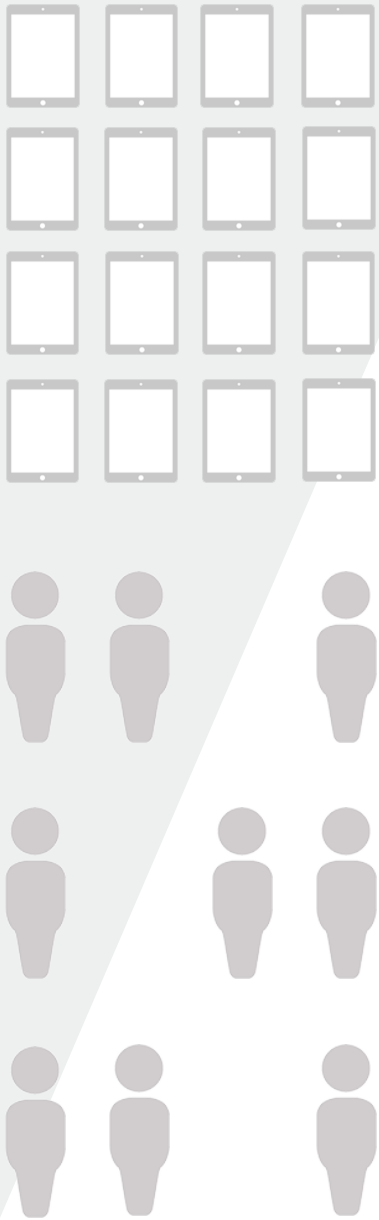
AGILE FRAMEWORKS

EXECUTIVE BRIEF

STAFFING SHORTAGES, LOW PRODUCTIVITY, AND LOW PROFITABILITY

TURNING CHALLENGES INTO **OPPORTUNITIES**

It is a well-known fact that the construction industry is notoriously cyclical. Year after year, annual industry studies report the change in historical metrics, painting a picture of the current year as compared to previous years and the current economic cycle. The incremental change in these metrics from year to year can easily evoke a ho-hum response; if you fit into the statistical ranges and nothing is changing by much, what is there to be concerned about?



What if this historical view is leading you down a path that hinders your organization's long-term survival?

Another more disruptive cycle is already underway and is not driven by economics. It's driven by technology and will mandate change in the techniques and tools organizations use to manage their companies for the foreseeable future to remain viable.

If that is not disruptive enough, layer on unprecedented talent shortages, a condition the World Economic Forum1 noted as a problem for the foreseeable future.

Combining technology disruption with talent shortages on top of chronically low productivity and profitability in the construction industry poses a serious question:

Can organizations maintain their status quo and survive, let alone thrive? **The answer is NO!**

Ending this vicious cycle will involve significant change and new ways of working. The new ways of working are found at the intersection of re-engineered operational processes, technology adoption, and new organizational structures that put the right resources in the right place for the right task at the right time. Organizations that successfully create this intersection could see double-digit productivity improvements and double-digit profitability improvements.

In this two-part executive brief, we first will establish that staffing, productivity and profitability are serious challenges that deserve serious attention. In part two, we will discuss how to take advantage of the available opportunities not only to address these challenges but to reposition your organization to thrive in this technology-infused world.

PRODUCTIVITY IMPROVEMENTS **ARE LONG OVERDUE**

McKinsey Global Institute has published several articles on the chronic productivity problem in construction. In a recent article, ***"Reinventing Construction: A Route to Higher Productivity,"*** McKinsey states:

"Even while other sectors from retail to manufacturing have transformed their efficiency, boosted their productivity, and embraced the digital age, construction appears to be stuck in a time warp. In the United States since 1945, productivity in manufacturing, retail, and agriculture has grown by as much as 1,500 percent; productivity in construction has barely increased at all. This not only represents a lost opportunity for the industry but costs the world economy. The industry needs a more productive approach. The tools for that more productive approach are increasingly available through digital technologies and new materials."

The McKinsey article goes on to say that "***productivity gains of 50 – 60% are possible and that those parts of the industry that could move towards a manufacturing-inspired production system could boost productivity tenfold.***"

SURVEY COMMENTARY REVEALS A LOT

A recent employee performance survey at an AEC firm exposed the reasons why productivity is so low in the commentary from the survey respondents regarding daily operating challenges. The comments revealed issues with:

- Delayed communication
- Inconsistencies caused by a lack of standardized business processes
- Performing work during the day onsite and then enter information after hours
- Training that is not accessible
- Problems getting timely answers to questions about safety
- Requirements that are moving targets
- Lack of detail in work performed
- Problems with timely supervision
- And the list goes on...

Are you ready to rethink your operating approaches?

SOUND FAMILIAR?

Think about how these productivity barriers compound across project stakeholders.

The McKinsey article also reveals that change is imminent, stating ***"there are forces lowering the barriers for change: rising requirements and demand in terms of volume, cost, and quality; larger-scale players and more transparent markets, and disruptive new entrants; more readily available new technologies, materials, and processes; and the increasing cost of labor. Construction-sector participants should rethink their operating approaches to avoid being caught out in what could be the world's next great productivity story."***

THE TALENT SHORTAGE RAGES ON

Albert Einstein is credited with saying ***"The definition of insanity is doing the same thing over and over again, but expecting different results."***

The 42nd Annual Deltek Clarity Architecture & Engineering Industry Study noted that recruiting will be increasingly competitive with hybrid workplaces expected to become a mainstay. Investment in technologies that boost operational efficiency – whether staff is in the office, on a job site, or in the built environment – is crucial to maintaining competitiveness and attracting top talent.

Unfortunately, organizations are trying to solve the talent shortage problems with traditional tactics: add more human resources staff to try to find more candidates; or host more job fairs where hoping to get the right candidates rarely works out. Increasing the resources spent on recruiting and employee retention means your costs are rising, including competitive compensation.

DON'T CHOOSE INSANITY

So, what makes any organization believe that increasing the capacity of human resource operations will solve the talent shortage problem? It's insanity. This is where the productivity argument takes center stage. What if you could increase your overall productivity by 10% - 20% let alone the 50% - 60% that the McKinsey article argues is possible? What could be the impact on your staffing requirements? What could be the impact on your human resource spending? How much could you raise compensation to compete?

MILLENNIALS ARE COMPENSATION MINDED

Deloitte's 2021 Millennial and Gen Z Survey noted the COVID-19 pandemic has heightened millennials and Gen Zs' uncertainty about their financial futures and has caused them to reassess and alter their financial goals. According to the Bureau of Labor Statistics (BLS), by 2029, more than 38.5 million people ages 35 to 44 will make up the labor force, outnumbering all other age groups either working or actively looking for work. Given the drastic ebbs and flows the construction industry has suffered for decades, the industry faces an even bigger challenge when it comes to attracting and retaining new workers.

401(k) Matching, Financial Counseling, and Tuition Support

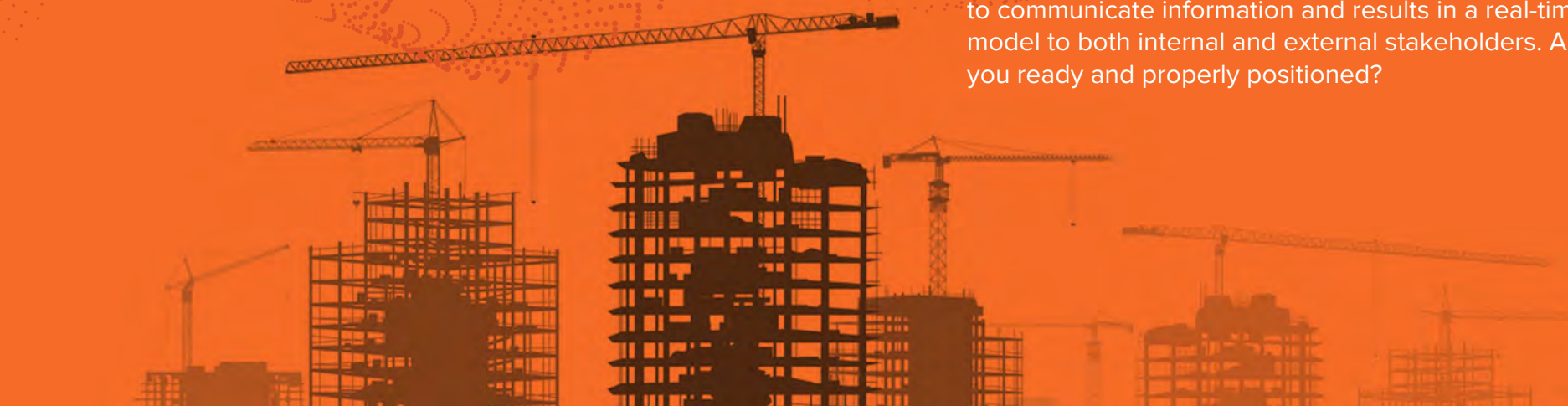
According to a recent Forbes article, if you want top talent, be prepared to provide top compensation, not free food or beanbags like you might expect. With the economy shifting, and millennials and Gen Zs stepping further into adulthood, these younger generations are looking for compensation packages that fit their evolving needs.

SO HERE WE ARE AGAIN

If low productivity plagues your firm and your costs to attract and retain talent are rising, you are entering a vicious cycle. Spending more to attract, retain, and compensate the talent you need means you must either pass increases on to clients or your profits will fall. If you don't have the staff you need to complete projects on time, your clients will lose confidence in you. If your clients lose confidence in you, your ability to win projects and protect top line revenue will be compromised. It's a vicious cycle.

EMERGING CONSTRUCTION TECHNOLOGIES ARE OVERWHELMING

Technology is clearly part of the productivity answer for construction, but it's one of the most complicated verticals due to the sheer number of different technologies to choose from. This was well articulated in a recent Constructionexec.com post Joanna Masterson states, ***"There's a lot for contractors to be excited about on the technology front: drones, BIM, mobile apps, sensors, wearables, telematics, smart tools, video documentation, robotics, 3-D printing, laser scanning, generative design and much, much more. But the prospect of all the analytics, alerts and automation can quickly turn overwhelming without a firm strategy and capable IT staff in place."***



A Closer Look at What it Means to Have a "Firm Strategy"

This technology age is dramatically different than anything in the past. It's in the news every day. Several industries already have experienced significant disruption, from retail to banking to automotive and there is no end in sight. It will continue to impact life and work as we know it for years to come. It's in the early stages of disruption in construction. It is the answer to increasing productivity, to competitive differentiation, and to sustaining profitability.

Strategy is Important

Leading the vision and execution of the strategy is important. These initiatives can simply no longer rest on the shoulders of the IT department. They must be executive led, cross functional, and continuously driving operational change. "Connected construction" is beginning to permeate the industry as the new mandate. It won't be long before you will be required to communicate information and results in a real-time model to both internal and external stakeholders. Are you ready and properly positioned?

TECHNOLOGY CAN HELP CREATE COMPETITIVE DIFFERENTIATION

In part one of this executive brief, we established that staffing shortages, low productivity and low profitability are challenges for the construction industry that embody both threats and opportunities at the same time. Technology is key to diminishing the threats while at the same time unlocking new opportunities and creating competitive differentiation going forward.

This technology-infused future demands organizations to think and act differently. Legacy organizations have a lot to overcome, most notably the power of their status quo. Too often today, organizations implement new technology without re-imagining how they must think or act differently. This results in technologies layered on top of one another, which in turn results in greater inefficiency and inaccessible data. It's taking the right steps, but unfortunately in the wrong direction.

NEW APPROACH WITH TECHNOLOGY AT THE CENTER

As we stated in part one, you need a new approach to overcome the power of status quo that holds back your progress or sends you in the wrong direction. This new approach—with technology at the center—is a combination of re-engineered operational processes, data, and new organizational structure. But moving in the right direction doesn't start with technology selections. It starts with leadership.

In part two of this executive brief, we will discuss the five essential ingredients to address the challenges outlined in part one that will position your firm to thrive in this technology-infused world.

STEP 1

START WITH LEADERSHIP

There is no question that successful digital journeys start at the top. CEO vision and executive team alignment are essential to successful execution. In *Orchestrating a Successful Digital Transformation,* ***"...it's no surprise that our survey respondents cited executive alignment as the No. 1 factor in successfully executing a digital transformation...The most effective leadership teams learn how to establish a common understanding of priorities and allocate resources against them based on clear rules and governance – rules that emphasize gang-tackling the most important priorities rather than spreading resources evenly across everyone's pet projects."***

GET RID OF THE ORGANIZATIONAL SILOS

We have learned from digital leaders that it takes a unified cross-functional team, including technology, operations, sales, marketing, and finance to agree on how the business should change before embarking on transformational efforts and embracing new technologies.

Changing to a model where initiatives are envisioned, prioritized, and executed across the organization is a new concept for most, as most organizations are still organized in functional silos with individual goals, objectives, incentives, and limited alignment across the silos. As a result, they deploy new technology into a flawed model that will continue to yield fragmented processes, inefficiencies, and a lack of actionable data.

SET YOUR VISION WITH CROSS-FUNCTIONAL TEAM

So, step one is to engage in vision setting with your CEO, then establish a team of cross-functional executives and engage in discussion on how the business must change to create competitive differentiation through the deployment of disruptive technologies.

STEP 2

CHANGE YOUR PROCESS

Legacy organizations struggle to re-imagine the way they work. To solve for this, they must begin to exercise more intentional management over business process change. This is especially important in the construction industry due to the dynamic nature of the work and the myriad of technology options to consider. Business process management is becoming a primary tool necessary to support ongoing transformation initiatives, where innovation must be continuous, where the data analysis is critical, and where it is crucial to have the agility to implement changes--all to meet the growing demands of customers who are becoming more digitally savvy every day.

EVALUATE HOW YOU IMPLEMENT CHANGE

Stop and think about the approach you use to implement change in your organization today. It's probably time to take it more seriously, more comprehensively, and more disruptively to remain competitive and generate momentum that will resonate from the inside and outside of your organization.

STEP 3

CREATE A CHAIN REACTION

When it comes to process improvements, there is a clear place to start for AEC firms. As we noted in part one of this brief, productivity problems have plagued the construction industry for years. Fortunately, technology now provides a way out of this chronic condition. In fact, it is the only way out.

There is an opportunistic chain reaction to be created that starts with productivity improvements in operations that will in turn reduce your time and investment attempting to manage talent shortages in Human Resources that in turn will impact your ability to attract and retain younger workers. It's a big win-win-win!

THE HIGH COST OF MANUAL PROCESSES

If you are mired in manual, fragmented processes and/or dependent on individual productivity tools like spreadsheets today, don't be surprised if there is strong pushback against an automated process. There is no question that the flexibility and control in a manual, individually controlled process appeals to an individual user.

However, it is also these conditions of flexibility and individual control that carry an incredibly high cost. That cost is often hidden in a lack of consistency, an inability to communicate efficiently, data that is locked up in individual repositories, and a complete lack of identifying and managing predictive performance indicators.

CREATE VALUABLE DATA

Also recognize that you will invest more time up front in defining and automating the process as well as in project setup, but it is exactly that effort that will allow the field work to be performed with greater speed, accuracy, and consistency. The bonus is that you will create valuable data by default.

For example, you don't just digitize a field data collection form. You set up the form to mimic the workflow the field technician follows to collect the data. This allows for you to leverage the data internally to measure operational efficiencies and externally to meet client needs faster, more efficiently and more accurately.

LET YOUR PROCESS IMPROVEMENTS EVOLVE OVER TIME

Allow your process improvements to evolve over time in a continuous improvement model. There's a lot to learn as you go and a lot of evolving technology to consider. Recognize that everyone's technology landscape will continue to evolve for the foreseeable future.

It is equally important to predict and measure your productivity gains as you go. Predicting and validating operational gains allow management to adjust hiring plans and lower related HR costs.

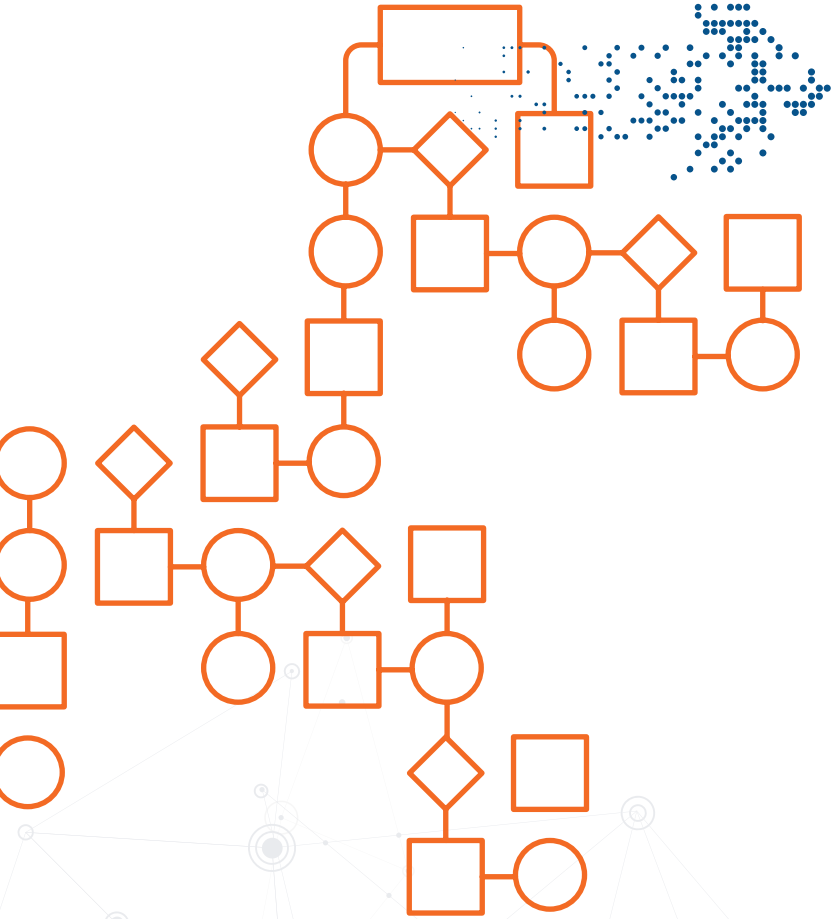
ATTRACT NEW HIRES WITH POWERFUL TECHNOLOGY FOOTPRINT

Last but not least, your technology footprint silently speaks volumes to millennials and Gen Zs who now represent the largest demographic in the workforce. As digital natives, they expect new technologies to be embraced continuously at work and they may be one of your greatest resources to assess and drive new technology-based improvements. Instead of apologizing for a void of current technologies in your operations, embrace the younger generations in the mix of process improvement and see what happens.

STEP 4

GET A GRIP ON YOUR TECHNOLOGY LANDSCAPE

One of the most challenging situations faced by organizations today, especially those who are managed in functional silos, is to connect all the disparate applications that continue to proliferate throughout the organization. With the emergence of more and more Software-as-a-Service (SaaS) applications, an organization may not even be aware of all the technologies being used by various individuals.



MAP OUT PROCESS FROM BEGINNING TO END

This issue puts an exclamation point on why you should map out a process from beginning to end before applying technology to any individual piece of the process. As the construction industry demands more and more real-time connectivity and transparency, you simply cannot afford to let this condition continue to grow out of control.

This should be a team effort to not only identify the applications in use, but to determine the roles the various applications play and analyze the value of each application. In addition, identify which applications should be the system of record for information and which ones should be the system of reference. Also review the integration between each of the applications to identify important weaknesses or omissions.

INITIATE TECH IMPROVEMENT AND MANAGEMENT PLAN

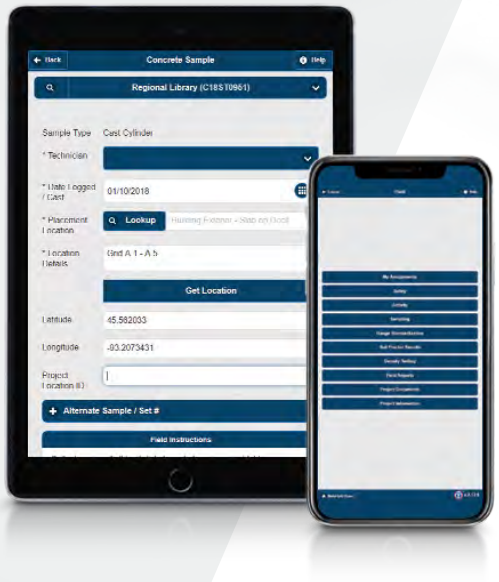
Once you have completed this exercise, you can initiate a plan to make improvements where necessary to drive efficiency in application selection and management as well as connecting processes across applications to gain efficiency and accuracy in daily operations.

Finally, share your technology landscape with other parts of your organization—mid-management and key performers—to help them understand the strengths, weaknesses, opportunities, and threats you've identified, as well as the growing complexities. Today, this is a strategic issue that must be understood and appreciated at all levels of leadership.

STEP 5

GET GOING WITH YOUR MOST VALUABLE ASSET—DATA

Time may be money, but data is the new gold. We are now in an age where data is the most valuable asset to a business. The data that your business produces, collects and analyzes is its unique identifier--the thing which defines it and sets it apart. So, if we view data as a type of corporate currency, the most valuable companies are arguably those that are truly data-defined, using data in new ways to drive innovation, predictability, and value.



PUT DATA-DRIVEN STRATEGY AT CORE OF TECH DISCUSSIONS

Data-driven businesses find ways to source information that would take hours to create in one-off scenarios. Technology can now create, analyze, share, and monitor data for us in seconds—not hours. If your processes are grounded in labor intensive processes that capture data via spreadsheets or other manually supported efforts, realize the magnitude of the inefficiency and the associated cost as the future unfolds.

So, if data is the new gold, then data management platforms for the construction and engineering industry are the banks in which that gold is stored. If a data-driven strategy is not at the core of your technology discussions, it's time to design a new foundation.

Summing It Up

Don't underestimate the importance of these five elements to address the staffing shortages, low productivity, and low profitability challenges. Leverage them to effectively create new ways of working that put the right resources in the right place at the right time and position your organization for success.

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