# CFMA Building Profits

THE MAGAZINE FOR CONSTRUCTION FINANCIAL PROFESSIONALS

# R E P R I N T



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THE MAGAZINE FOR CONSTRUCTION FINANCIAL PROFESSIONALS

## IT SOLUTIONS

**FEATURES:**
"On Purpose"
Profitability

The Fifth
Dimension
of BIM

**ALSO IN THIS ISSUE:**
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Role of IT

Web-Based
Processes

Benchmarking
Insurance
Claim Data

# JULY-AUGUST 2008

BY KURT M. KOENIG

Used effectively, the 4Ds (Develop, Document, Deploy, and Drive)
can tilt the playing field in favor of any company
committed to purposeful profitability.

## Introduction

Every contractor struggles with maintaining growth and profits, especially in times of shrinking markets, tougher competition, and tighter margins. So, what determines who succeeds, compared to who merely survives or worse? CFMA's Construction Industry Annual Financial Survey results point to the answer.

Over the years, the majority of Survey respondents have chosen "Do what we do better" as the leading strategy to improve profitability. (See Exhibit 1 on the next page.)

However, many companies may find it easier to agree with this strategy than to execute it. Why? Because the key to "doing better" is an *ongoing, disciplined approach* to defining and deploying best practices in the areas that have the greatest impact on profitability.

This article offers some definitions of best practices and describes how to implement a continuous improvement, best-practice culture using process analysis and emerging information technologies.

## The 4Ds

How does this work? By advancing through a continuum of developing, documenting, deploying, and driving best practices and policies to increase productivity.

### DEVELOP

Companies begin by identifying those processes that create company-wide "productivity leaks" and then they develop a set of best practices that, when followed, will stop the leaks, improve productivity, and increase profitability.
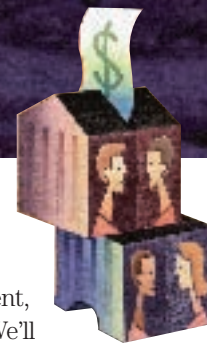
### DOCUMENT

Most companies traditionally document their best practices in "Policies and Procedures" manuals and attempt to train against these best practices; more sophisticated companies place this information in a central repository for everyone to access.

### DEPLOY

Companies integrate their best practices and policies into their core activities, with workflows that mirror these best practices as they push work through to completion.

### DRIVE

Successful companies drive the adoption and use of best practices by embedding them into their corporate culture and systems. Equally important, successful companies drive feedback about how best practices can be improved – even taking them back to the developmental stages for continuous improvement and adaptation when business conditions change or users suggest better ways to get things done.

"Flexible" processes that respond to team input and business changes are essential. Therefore, the develop-document-deploy-drive (4D) continuum should be viewed as a classic process loop, where continuous improvement is the primary motivator.

## The Better Performers: Their Current State

Start by assessing where your company is on the 4D continuum. Most contractors are somewhere between the develop and document stages.

So, these better performers have gotten to the point of developing best practices for their key activities and documenting them in a procedures manual. However, their employees still need to: 1) know that a documented best practice exists, and 2) be motivated to locate and follow it.

Not good enough! If we look at the many steps involved in just one vital process (ensuring that extra work is recorded, priced, presented, approved, and billed), that leaves a lot of room for incomplete or substandard execution.

Multiply that by all of the key processes in construction and you will enhance your appreciation of the challenges associated with "Doing what we do better."

So, we'll look at how you can develop, document, and deploy best practices to drive profitability. We'll also learn how technology can help drive the use of those practices to support your company's goals, and improve the quality of your staff's day-to-day experience.

We'll use the example of instituting best practices in getting paid for extra work to illustrate the process.
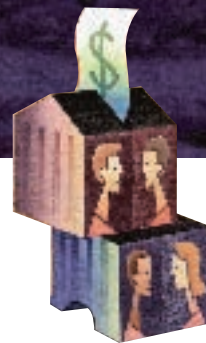
## Definitions of Best Practices

The process starts with identifying and developing best practices that, when adopted company-wide, will help drive profitability. Here are several definitions of "best practice" to keep in mind as you work through the process:

*Wikipedia.com:* "...the most efficient (least amount of effort) and effective (best results) way of accomplishing a task, based on repeatable procedures that have proven themselves over time."

*Bridgefieldgroup.com:* "Standard, published operating methods found to produce the best performance and results in a given industry or organization."

*WhatIs.com:* "A technique or methodology that, through experience and research, has proven to reliably lead to a desired result."

| Exhibit 1: Strategies to Improve Future Profitability | | | | |
|---|---|---|---|---|
| As published in CFMA's *2007 Construction Industry Annual Financial Survey*, respondents selected which strategies were under consideration to improve their company's profitability, other than geographic expansion. *(Participants could select multiple answers.)* | | | | |
| | **All** | **Industrial & Nonresidential** | **Heavy & Highway** | **Specialty Trade** |
| **Do What We Do Better** | 75% | 79% | 83% | 71% |
| **Risk Management** | 55% | 54% | 73% | 53% |
| **Training** | 52% | 56% | 58% | 50% |
| **Information Technology** | 42% | 51% | 43% | 38% |
| **Design-Build** | 31% | 38% | 32% | 29% |
| **Cut Overhead** | 22% | 22% | 29% | 19% |
| **Related Services** | 29% | 29% | 28% | 33% |
| **Mergers & Acquisitions** | 9% | 6% | 16% | 9% |
| **Investment in Unrelated Businesses** | 3% | 4% | 5% | 2% |
| **Other** | 5% | 6% | 2% | 5% |

**"FLEXIBLE" PROCESSES** that respond to team input and business changes are essential. Therefore, the **4D CONTINUUM** should be viewed as a classic process loop, where **CONTINUOUS IMPROVEMENT** is the primary motivator.

## COMMON THEMES

The common themes among these definitions are:

*Process:* A standardized way of doing things.

*Results:* Expressed in efficiency of execution and effectiveness of outcome, with emphasis on "best" outcomes.

*Experience:* Processes and results that have been proven effective in practice.

## INDUSTRY EXPERTS

How do industry experts measure successful best practices? According to the Hackett Group (a consulting firm that focuses on best practices, benchmarking, and transformation services), best practices:

- Align with strategy
- Reduce costs
- Improve productivity
- Promote timely execution
- Enable better decision-making
- Leverage/exploit existing/emerging technologies
- Ensure acceptable levels of control and risk management
- Optimize the skills and capabilities of the organization
- Promote collaboration across the extended enterprise

Over the past several months, I've had the opportunity to attend three excellent seminars that echo these themes in construction-specific contexts; all three represent the wide variety of resources available to help develop best practices.

## QUALITY IMPROVEMENT & PRODUCTIVITY

James Adrian of Bradley University and Adrian International LLC presented "Productivity Improvement with Lean, TQM, Six Sigma, and Performance Management" to the Wisconsin AGC.

Since writing his doctoral thesis on construction productivity in the early 1970s, Professor Adrian has studied, taught, and provided consulting services on how to improve jobsite productivity.

This seminar focused on how the various quality initiatives relate to productivity. Adrian has concluded that, once distilled to their essential content, these initiatives all address productivity using the following steps:

- *Identify cause:* You need to know what's preventing your company from achieving the results it wants in the identified target areas.

- *Measure:* Quantify improvements and measure results to provide a framework for prioritizing, focusing, and assessing the success of your best-practice initiatives.

  For example, such traditional metrics as productivity, cash flow, and profit would continue to be important, but would be combined with such performance measurements as cycle times (elapsed time to resolve an RFI, approve an invoice, produce a billing, etc.).

- *Brainstorm:* Solicit input from the best and brightest in your company to acknowledge that your employees are a rich source of ideas; this is key to employee acceptance and adoption.

  Resist being locked into the "we've always done it this way" mindset. Also, actively seek new ideas from customers, business partners, and industry experts.
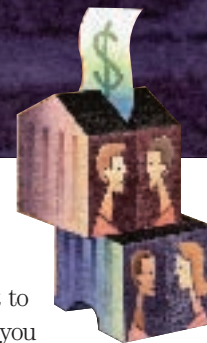
- *Continuous Improvement:* Consistent emphasis on continuous improvement reinforces the point that best practices are a journey, not a destination.

  Your customers, markets, project delivery systems, contracts, personnel, and technology all change. By definition, your best practices will evolve with them.

## CONSTRUCTION SYSTEMS THAT WORK

"Construction Field and Project Management Systems That Work!" was presented by George Hedley of Hedley Construction and Hardhat Presentations. As a construction IT professional, I signed up for this seminar expecting to learn more about the different types of field software used by contractors.

Hedley quickly made it clear that the "systems" he and other successful contractors have put in place are fundamentally a set of best construction business practices. He presented the following "thought process" for developing best practices:

- List the typical problems experienced on your jobs *(late submittals)*.
- List the symptoms for each problem *(delays)*.
- Decide how these problems could be avoided *(track and follow up on submittal dates and responsibilities)*.
- Determine the real problem that is causing the issue *(lack of a best practice/system to track submittals)*.

Let me emphasize again that the "system" in question here is not necessarily a piece of software that tracks submittals. The "system" is an agreed-upon set of best practices that have been proven to produce timely processing and approval of submittals to prevent delays.

Many contractors have one or more software applications that track submittals. But, how many contractors have a defined best practice for managing submittals that is consistently followed by all of their PMs?

The hard question you need to ask is, "How many staff really know and consistently follow the best way to execute our submittal processes?"

## CHANGE ORDER MANAGEMENT

"Best Practices in Change Order Management" was presented during CFMA's 2008 Annual Conference & Exhibition by Thomas Kort of FMI Corporation.

Here's the essence of his presentation: If you want to consistently receive timely payment for extra work, you need to implement a set of best practices directed to produce that outcome.

We'll consider the change order process shortly. The point here is that Kort, Hedley, and Adrian are consistent in their emphasis on using best practices to improve a company's performance. Further, these experts all agree that the first step is to develop those practices.

## Step 1: Develop

Let's apply Hedley's formula to Kort's topic:
- Problem = Non-payment for extra work
- Symptom = Negative impact on profit and cash
- Avoid by = We'll get to this in a minute . . .
- Real Problem = Lack of a change order best practice

So, to develop a change order best practice, we must think through how to avoid not receiving payment for extra work (or having that payment delayed to the point that it becomes negotiable at the end of the job). Paraphrasing Kort, these best practices would:

- Scrutinize and, if necessary, negotiate contract language before signing to make sure your company's rights are protected.
- Train field personnel to recognize scope changes.
- Provide appropriate notice when extra work is requested.
- Insist on written approval/authorization before proceeding with extra work.
- Ensure that you are accounting for all direct and indirect costs when pricing extra work.
- Request schedule, as well as cost, extensions.
- Issue timely invoices and demand timely payments.

*Note:* This is a simplified and condensed version of Kort's presentation at CFMA's Conference, and illustrates the problem-avoidance thought process. In fact, he will be writing on this topic in a future issue.

Since most contractors are somewhere between the develop and document phases, it's interesting to note that only one CFM in the audience said that his company had developed, documented, and deployed this type of change order process.
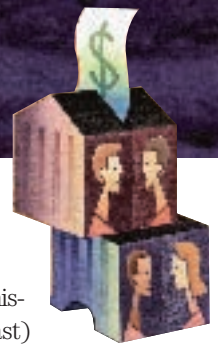
Even more interesting was the following exchange, which I believe Kort shaped to emphasize the benefits of following through on best practice discipline:

**Kort:** Do you follow this practice on all of your jobs?

**CFM:** Yes. If they won't agree to our terms, we walk away.

**Kort:** Are you successful as a company?

**CFM:** Yes. We have been in business for more than 50 years and have consistently experienced growth in revenue and profit.

**Kort:** Are you busy?

**CFM:** Yes. We regularly turn down work.

This exchange carries a clear message: This contractor's competitive advantage was driven by developing and deploying a set of best practices that appear to be different than those of many others. Here is a short list of recommendations for developing best practices.

### ANALYZE, ANALYZE, ANALYZE

Look at your company. Slice and dice your data based on how your company is structured. For example, review historical performance to assess your most (and least) profitable PMs, branch offices, lines of business, customers, and other facets that apply to your company.

### PRIORITIZE & FOCUS

Use measurements from your analysis to identify areas of greatest impact, and then focus on defining (and documenting, deploying, and driving) best practices for those areas. The lessons you learn from the first few will inform your efforts as you circle back to tackle more.

### BRAINSTORM & DIG

Dig into the details. What do your most successful PMs do that your least successful ones don't? What other ideas can you glean from your staff and other sources? Create your best practices to emulate what's been *proven* to work and to drive out what's been *proven* to cause problems.

Process mapping tools are useful to both stimulate thought and visualize the process. Cross-functional flowcharts are a popular tool that can be readily deployed. (These are sometimes called "swim lane diagrams" because they show one



Exhibit 2: "Swim Lane" of an RFI
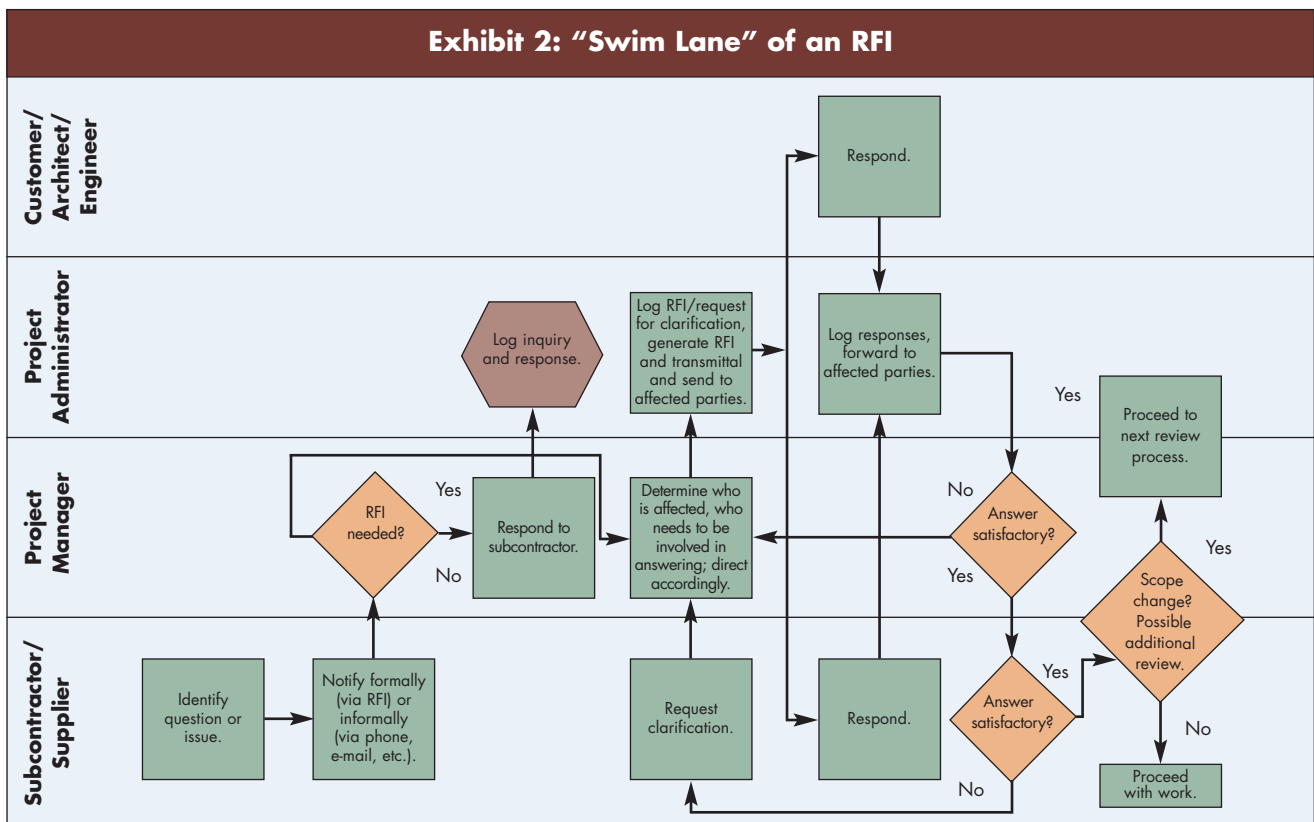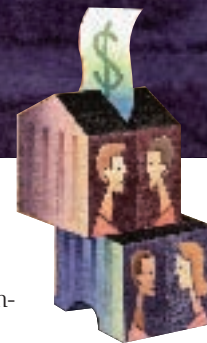
band or "swim lane" for each participant, using standard flow-charting symbols for actions.) Exhibit 2 on the previous page shows a simple RFI process using this tool.

### KEEP IT GOING

Commit to a culture of continuous improvement. Welcome feedback about the processes you have deployed, and about new opportunities for improvement. Then, update your best practices to reflect the new information.

## Step 2: Document

Hedley has a clear-cut criterion for differentiating "systems" (best practices) that work from those that don't: Best practices that only exist in peoples' heads don't work! The best practices that work are documented and measured.

During the development process described in Step 1, you will probably have created some form of documentation – process maps, cross-functional flowcharts, lists of "avoid by" steps, etc. Now, the goal of the documentation phase is to record your best practices in a *consistent, usable, accessible* format so that you can deploy them to your team.

Suggested items to include in your best practice documentation are:

- *Goals, results, or outcomes that your company expects from the process:* For example, receive timely payment for all extra work, and process all submittals such that there are no submittal-related delays.

  Express results in measurable form, and structure the processes to support measurement. Using the change order and submittal examples, you should discover whether your company had any late submittals and, if so, their impact on the schedule.

  You will also need to determine whether your company performed any out-of-scope work that it did not receive payment for.

- *Guidelines:* This might mean that no extra work will proceed without written authorization from a designated owner (or GC) representative, and that submittal dates shall be linked to the schedule and monitored weekly.

- *Checklists:* These might include contract clauses to review and negotiate before signing any contract, and steps for logging and tracking submittals.

- *Responsibility:* Clearly define who (PM, superintendent, VP Operations, etc.) is responsible for each action or step. Your cross-functional flowcharts will help define and document responsibilities.

- *Measurement:* This includes the metrics you will use to measure execution, collection, recording, review, and timing.

## Step 3: Deploy

Successful deployment of best practices is about top-down commitment to challenging and changing the existing culture of your company. Companies that succeed stand to gain big rewards.

The American Productivity & Quality Center has discovered that, "The three main barriers to adoption of a best practice are a lack of knowledge about current best practices, a lack of motivation to make changes involved in their adoption, and a lack of knowledge and skills required to do so."

All the defined and documented best practices in the world will not help if your employees aren't trained and motivated, or if the best practice manual sits unused on a shelf. Let's look at deployment strategies that address these three barriers.

### PROBLEM: LACK OF KNOWLEDGE
### SOLUTION: PUBLISH & PUBLICIZE

Ensure that the best practices you have developed and documented are published in a format that is both accessible and known to all your employees. Try to avoid the traditional approach of collecting best practices in a printed "Policies and Procedures" manual for distribution to employees.

The advent of Intranet technologies makes it possible to electronically publish and access policies and procedures (and other company documents). Intranet publishing simplifies access for employees.

These technologies also make it much easier to distribute updates as they evolve over time, and to measure the use of policies and procedures by tracking who has accessed the documents and when.

### PROBLEM: LACK OF MOTIVATION
### SOLUTION: LEAD & MOTIVATE

Management up and down the line must show its commitment to the best practices and communicate their level of importance to the company. Let's return to the change order
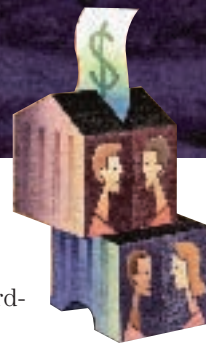
example and Kort's session on the financial impact of unpaid change orders.

Composite results in *CFMA's 2007 Construction Industry Annual Financial Survey* indicate an average net margin before taxes of 2.7%, which we'll round to 2.5% for example purposes. At that rate, for every $100,000 of extra work that goes uncollected, your company will need to pick up $4 million in additional volume to recoup the bottom line impact. So, try to kick off training for every best practice with similar, tangible, and measurable objectives.

It's also important that your company provide incentives for employees who follow through on best practices to produce the outcomes that you have defined. Even though compensation incentives are popular among employees, they aren't the only option.

Other forms of recognition (such as features in company newsletters, prizes, special parking, or other privileges) also drive employee motivation. But, you must tie your incentives to tangible and measurable performance results.

### PROBLEM: LACK OF REQUIRED SKILLS
### SOLUTION: TRAIN

Ensure that all employees are trained on the best practices that are relevant to their area(s) of responsibility. Measure attendance by recording participation by employee, class, and date. Then, measure training effectiveness by performing and recording skill assessments.

## Step 4: Drive

In terms of practical results, your company will only realize the full benefit of the 4D continuum when best practices are actually driven into your employees' hands to help them do their jobs more easily and effectively. (See Exhibit 3 below.)

One measurement of successful deployment is the extent to which overall performance has improved as a result of the average and sub-par performers adopting the practices that have allowed your "superstars" to excel.

While the first three steps (develop-document-deploy) must always be taken, the crucial elements of adoption and use are still up to each individual employee. So, your new best practices must become an integral part of the tools your employees use to get their work done.

In the case of your high-value workers, this takes the form of software and systems that guide them through the business processes so that their work is easier to perform. Such systems also ensure that everyone consistently follows the recommended path. Until recently, this was a hurdle – even with well-motivated employees.

## ERP: Past & Present

Over time, construction ERP systems have evolved as either:

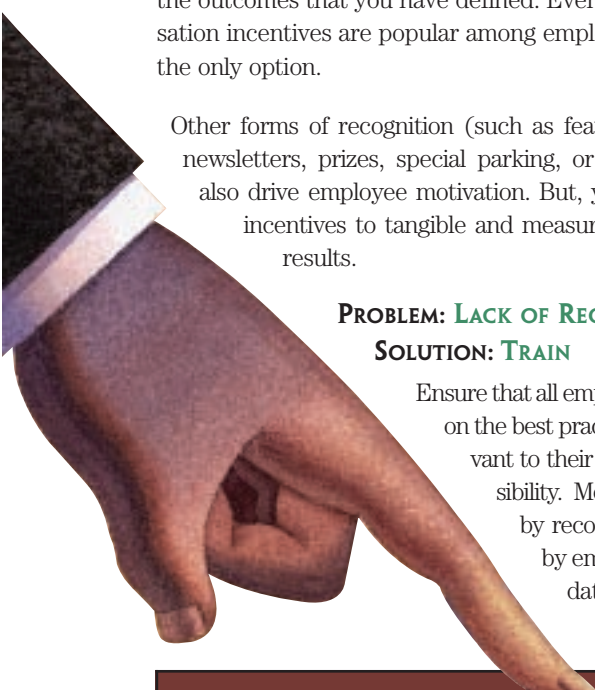1)  Third-party document management systems bolted on to construction ERP packages, or

| Exhibit 3: The 4D Continuum | | | |
|---|---|---|---|
| * DEVELOP | * DOCUMENT | * DEPLOY | * DRIVE |
| Employees must be relied on to find, access, and use best practices. | | | Company systems push content and process to employees. |
| Your best performers will likely continue to excel because they are motivated. Other employees (and overall company performance) will lag unless they receive ongoing, proactive guidance and support. | | | Company performance is optimized because all personnel are directed to and led through best practices. |
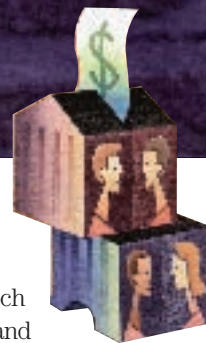
**2)** Homegrown document management functionality added to existing ERP applications by construction software vendors.

The value contractors have received from these first steps toward a comprehensive best practices implementation indicates tremendous potential when fully realized. But, getting there requires overcoming several hurdles.

The third-party document management systems offer reasonably robust content management functionality, but can suffer from deficient integration touch-points, multiple user interfaces, high maintenance costs, and the data integrity/duplication/synchronization issues endemic to all "bolt-on" IT solutions.

Homegrown construction ERP document management and workflow packages typically deliver tight integration, but construction ERP vendors just don't have the "horsepower" to keep up with their core product offerings and compete with the range of features and functions offered by the best in class document management and workflow suites.

And, the footprints of both are typically confined to realms traditionally addressed by construction ERP systems: finance, payroll, and project and accounting functions.

Informal interviews with a number of IT consultants and CPAs at CFMA's 2008 Annual Conference & Exhibition indicate that very few contractors have implemented document management and workflow beyond such basic accounting-oriented applications as A/P invoice routing and approval.

## "The Times They Are A-Changin' "

But, best practices implementation demands the ability to address workplace processes beyond the traditional finance domains – both within the contractor's business and outside its "four walls." Customers, subcontractors, suppliers, regulators, finance, surety, and other third parties integral to construction must also be involved.

### The Software Giants

Fortunately, the software industry at large is very aware of and responding to the growing demand for best-practice applications. Dominant software players like Microsoft and Oracle are incorporating document management and workflow capabilities into the development tools their business partners use to build applications.

Though it will take awhile for these giants to catch up with the best in class document management and workflow specialists – and more time after that for their business partners to fully integrate these technologies into their application suites – the trend bodes well for the future of construction software applications.

### The Document Management/ Workflow Specialists

For the past several years, leading developers of best in class document management and workflow applications have responded to the demand to embed their technologies into business applications.

The most robust document management and workflow tools have become an integral part of business application software to the extent that end users view it as a single, homogenous system.

*Put another way:* Neither boundaries nor distinctions now exist between traditional ERP transaction processing and management functions, and the documents and business processes that support them.

### Lots of Good News

At this point, you're probably thinking, "Wow! This sounds like a lot of work and change to push through. Just converting accounting systems a few years ago put a lot of strain on my team and the company as a whole."

This was certainly an issue with older technologies and approaches for deploying best-practice software and processes. Companies had to choose the lesser of two evils: preconfigured software that could be used "out of the box" but was too rigid to adapt to current and future needs, or highly configurable systems that were very expensive to set up and maintain.

*The good news:* When coupled with best-practice delivery methods, the next wave of information systems provides contractors with a road map and the tools to identify, codify, and deploy best practices throughout their companies.

These systems are rooted in the traditional construction financial domains, but for the first time, can extend to include all company policies, practices, and procedures.

*More good news:* Software delivery and implementation techniques are evolving along with the technologies. Business
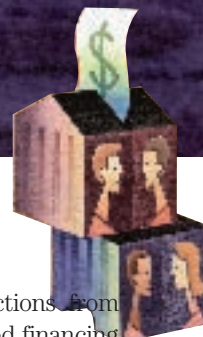
process, best-practice driven application vendors can considerably shorten the time and lessen the pain of implementation cycles because:

- Document management and workflow expertise have been added to the traditional ERP skill sets of professional IT service teams. This means they arrive ready to help you through the development, document, and deployment stages.

- Pre-defined, easily modifiable templates by business profile are now available. This means that the IT service teams arrive with sets of proven, pre-defined workflows – whether you're a $20 million electrical contractor performing a mix of construction and service work with your own field labor or a $1 billion GC/CM firm with a variety of project delivery options.

- Highly configurable user interfaces, business rules, and workflows are now embedded in the software so that business analysts can tweak the system and templates to match your best practices without relying on programmers.

  Examples include changing terminology to meet your company's semantics, specifying which fields to display and in what sequence, matching workflows to your best-practice processes, and showing participants in the workflow only those pieces of information they need to complete their part of the process.

These capabilities dramatically reduce implementation cost and time. In addition, the associated reduction in risk is significant. And, you'll notice an even greater payback in staff acceptance and ease of implementation.

## Conclusion

To recap, the route to increasing profits is "Doing what you do better" via a disciplined approach to developing, documenting, and deploying best practices throughout your company.

Here's the last and most important piece: implement the technologies that drive best practices out to your team, and that also drive feedback from the team back into the best practice development process. This cyclical process will produce two important results:

1) Your company will achieve such measurable goals and outcomes as margin increases due to improved billing and collection for extra work, cost reductions from fewer delays due to late submittals, re-duced financing costs due to shortened billing and collection cycles, and lower overhead from a new ability to take on more work without increasing back office personnel.

2) The work experience of your employees is greatly improved by using systems and tools that closely align with their jobs and help them perform better.

Are you ready to start? I've talked to your competition, and they are! **BP**

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An alumnus of the University of Wisconsin, Kurt is a frequent writer and speaker on technology issues for the construction industry.

Kurt has served as an At-Large Director on CFMA's Board of Directors and as Co-Chair of the Technology Committee. He is currently a member of the IT Council, and the Conference Planning and Finance Committees. He also participates in CFMA's Leadership Mentoring Program.

Kurt is a member of CFMA's Milwaukee Chapter and of other industry associations, including AGC and ABC. A longtime, active member of AGC's Electronic Information Systems Committee, he also serves on the AGCxML Task Force and Review Committee.

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### Web Resources:

1. **The Hackett Group:**
   *www.thehackettgroup.com/bpic/index.jsp*

2. **Adrian International LLC:**
   *http://hilltop.bradley.edu/~jadrian*

3. **HARDHAT Presentations:**
   *www.hardhatpresentations.com*

4. **FMI Corporation:**
   *www.fminet.com*