



# BCG IT UPDATE

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## New Look on Our Site!

In June BCG launched a new web site to better serve our clients and increase visibility. We worked with a designer to create a new look and improve usability. You can now access this newsletter on the site, learn more about our articles' authors, or complete the interactive IT self-assessment scorecard. Check out the **Resources** section for articles and whitepapers and announcements regarding upcoming conferences.

[burgerconsulting.com](http://burgerconsulting.com)

## Now Comes The Boom

*A Message from Christian Burger*



I am pleased and proud that Burger Consulting is as busy as we've ever been in our ten years of existence—even though we now have more experienced resources to help clients.

Why the frenetic pace?

First, the technology market has completely shaken off the post-2001 slump and has renewed vigor—though it is more cautious. Second, consolidation has prompted concern about the viability of certain legacy vendors—and a fresh look at alternatives. Third, younger staff that joined construction companies in the '90s are now moving into management; deeply familiar with technology, they appreciate its potential and its value.

Combined with a strong construction market, these factors have spurred a terrific, busy market for construction IT, and Burger Consulting has enjoyed a wonderful past 18 months. We've attracted bright, experienced talent to the firm, and have been chosen by some of the country's most admired construction companies—including

large, complex companies that challenge us in new ways. Our work has taken us from Vermont to Texas to California and many places in between; trips to Jamaica and Surinam are on the horizon before the year is out.

Again this fall, I'm teaching the Technology in Construction course at Northwestern University's School of Engineering, part of its two-year Masters in Project Management program for students who have a construction or engineering degree and want to advance their careers. I have twelve students this semester and they are truly a global group. For information on the program, which I highly recommend for up-and-coming project managers, visit [mpm.northwestern.edu](http://mpm.northwestern.edu).

Going forward with teaching this fall with a committed schedule was not an easy choice. But I continue to enjoy keeping my foot in the Northwestern Community.

Busy as we are, please know that if you do call, someone will certainly answer. (We may just be out of breath!) As always, we truly value the support from our most excellent clients. Thank you.

## Project Management Software Selection *by John Patridge*

A decade ago, companies seeking software to handle project management data didn't have much choice beyond a spreadsheet. Today, the market is rich with options. Products most of us knew ten years ago have been joined by worthy competitors, playing for market share in interesting niches.

Unless you've a well developed sense of adventure, this breadth of offerings may not be welcome. After all, construction operations personnel are not known for having passive, neutral personalities; they have strong opinions on processes they believe are crucial to success. And busy people won't tolerate even the most functional software if it doesn't fit their existing processes. The phrase "I'm here to build a building, not to manage software" will be tossed out more than once during the course of the selection, a sentiment

shared by many operations people even if they don't verbalize it.

So, if you're charged with making technology decisions about PM software, the right answer starts with making good observations and asking the right questions. You can start by assessing your operations group's personality, doctrines, and structure:

- Is the group cohesive in philosophy and practice at the company, divisional or job level?
- Is the management team a loose federation or a strict, structured group?

These and other questions bring into focus the characteristics you need—and flexibility, structure, and ease of use take on more meaning. *(continued from p. 1)*

## New Service Offering: Contract CIO

Clients with CIOs enjoy better performing departments, clearer vision, better alignment of technology with strategic direction, and more satisfied users. They also tend to have more cost-efficient operations. This is all driven by an individual that has time to run the department instead of getting bogged down in support issues.

Many BCG clients need the direction, vision, and insight of a CIO but can't afford one full-time. Early in 2007, BCG will formalize a Contract CIO service—something we've been providing informally for some time. Several of us have been CIOs for construction companies and are fully capable of providing such expertise part-time. Clients that work with our consultants soon realize that a little objectivity, experience, and leadership go a long way.

Most CIO engagements involve little more than quarterly visits and regular communication; the length of involvement depends greatly on organizational size and the complexity of the IT environment. For many, an initial diagnostic visit helps us understand the applications, hardware environment, and staffing situation. Part of this process includes a web-based survey of the user community to get a better handle on support, remote access, and system performance. Interested? Let us know—or stay tuned for more details.

## Top Drywall Contractors Choose BCG

CDM Service Group in Omaha, NE and Manganaro in Maryland—two of the nation's largest drywall contractors—recently chose BCG to help them replace back-office accounting and job cost software. CDM selected Penta Technologies, a tough decision, but Penta's flexibility and product direction won out. Manganaro's process is in the demonstration phase as of this writing. We are pleased to be serving such prominent members of the specialty contractor community.

## Current Clients and Projects

Client	Location	Engagement
Shimmick Construction	Oakland, CA	Software selection
Pizzagalli Construction	Burlington, VT	Software selection
SpawGlass Contractors	San Antonio, TX	Software selection
Tellepsen Builders	Houston, TX	Software selection
CCC Group	San Antonio, TX	Software evaluation and selection
Hourigan Construction	Richmond, VA	Software evaluation and selection
Brubacher Excavation	Bowmansville, PA	Software evaluation
Shook	Dayton, OH	Software implementation
Torcon	Redbank, NJ	Software implementation
Rigging International	Alameda, CA	Software selection & implementation support
Centex Construction	Dallas, TX	Software selection
Jones & Frank	Raleigh, NC	Implementation support

## BCG's New RFP Tool

In general, BCG doesn't recommend custom programming; we use standard software for accounting, billing, and other office functions. But at times, custom development makes sense. Needing a better way to collect RFP requirements from clients and solicit vendor responses, we broke one of our own favorite rules and had it built.

Our developer, from Widespread Solutions ([www.widespreadsolutions.com](http://www.widespreadsolutions.com)), used an application development tool called Ruby on Rails to create a web-based tool that houses over 800 features commonly required from construction companies, along with responses to each feature from the software vendor community. This allows us, our client, and a vendor to collaborate on a single database—making the entire process much more streamlined.

As a result, while the RFP process remains much the same for clients, vendors need respond only to new items that they have not yet addressed and review ones they've responded to negatively in the past. With technology questions and vendor background metrics in the database, items requiring a vendor's response have been reduced from 800–900 to 30 or 40, allowing us to reduce vendor response time from three weeks to two. The developers even built in alert notification: When a new RFP is issued, the vendor is notified; when they respond, BCG sees that their response is submitted. The tool also saves response results and outcomes so vendors can track how they are doing on BCG selection projects, an important metric to them. Equally important, we've shortened the time we need to evaluate responses—lowering costs for clients. We are thrilled with the results of this effort and continue to enhance the tool as time and funding allow. And feedback from vendors has been unanimous: "We love it!"

## Ben Westendorf Joins BCG

We pleased to announce that Ben Westendorf joined BCG this fall, bringing experience as a senior technology executive at several large firms, most recently as CIO at Clayco in St. Louis, where he is based. He also founded an executive technology consulting firm, and has substantial experience in IT strategy and planning, and software selection, evaluation, and implementation. Since joining BCG, Ben has been focused on IT strategy and organizational alignment. His quiet confidence is a welcome addition to the team and clients have already remarked on Ben's clarity in addressing technical issues. You can get some of Ben's thoughts on network technology on page 3. Email Ben at [bdwestendorf@burgerconsulting.com](mailto:bdwestendorf@burgerconsulting.com) or call (314) 605-5846.

## BCG Engaged by Panattoni

Panattoni Development and Panattoni Construction, one of the largest independent real-estate development and construction firms in the U.S., has engaged BCG to review their IT environment and application software and help develop a long-term IT plan. With offices in the US, Canada, and Europe, the companies face important decisions with respect to systems, software, and IT support. Like most developer/construction firms, the two operate autonomously, including in IT. BCG is reviewing systems, applications, and IT support, and helping Panattoni to optimize IT as it continues its phenomenal growth. BCG has sought the help of long-time ally RealFoundations on this project for its expertise in development and in MRI software.

## Paperless Environments: A Review *by Doug Nichols*

Imaging and workflow products continue to make their presence felt in the construction industry. Recently, BCG visited Paperless Environments in Baton Rouge, LA, to review a product developed in 2001 by a large contractor. BCG visited Paperless Environments in Baton Rouge to review an **imaging and workflow** system developed by a large contractor—one of the few times BCG has seen a contractor-developed system achieve success in the marketplace.

The product's primary function is to convert paper documents to digital images that can be routed for review and approval and/or filed electronically. Files already in digital format (Office files, CAD files, etc.) are handled similarly. Documents are filed electronically in a central database, named the Vault, that serves as the heart of the system. Documents are stored in the Vault during the routing and approval process and remain there once processing is complete. All contain index values for lookup and retrieval; they can be emailed, printed, or faxed as necessary.

The most popular application is Accounts Payable, which integrates with

popular construction industry accounting packages including Viewpoint, Timberline, Computer Guidance, Starbuilder, Penta, Masterbuilder, MAS 90, Amicus, and Construction Partner. Documents are scanned (or files imported) in batches and routed for approval. When items are coded and approved, they are exported as a batch into the AP system for further processing.

The accounting package integration includes the ability to prompt for valid AP data such as vendor number and job number while processing the document in the imaging system. Status reporting on invoices in progress is also available. Recently, a new module designed to route any non-AP document or file in a similar manner has been released.

The document routing application is also a newly released application. This package utilizes the routing functionality of the AP product and is designed to handle all other files, documents, and images including internal forms, contracts, and general correspondence. Paperless Environments has 45 customers across the country. For more information, visit [www.paperlessenvironments.com](http://www.paperlessenvironments.com).

## Managing Voice & Video with MPLS *by Ben Westendorf*

Significant convergence in networking infrastructure has occurred in the past decade, impelled by the emergence of multi-protocol label switching (MPLS). Enormous productivity and efficiency gains are inherent in this convergence; and by providing connectivity of multiple decentralized offices, MPLS creates considerable savings for companies that previously relied on smaller ATM and frame-relay connections.

However, growing demands on IP infrastructure weigh heavily on many IT departments. In the past, networks primarily were devoted to providing data, such as emails and files. But increasing use of voice-over-IP (VOIP) and video over IP in WAN and LAN environments is straining network bandwidth.

A successful MPLS network supports bandwidth-intensive applications of data, voice, and video, especially for voice and video that lack the tolerance for latency—the time it takes for data to get from one location to another. Reliable service for such applications can only be achieved by carefully planning and implementing an infrastructure through an

appropriate carrier and equipment manufacturer.

Quality of Service (QoS), which allows prioritization for demanding applications across the WAN and LAN environments, has been key to the success of MPLS. And businesses experience greater flexibility and positioning for growth with MPLS as the demand for voice and video grow. But as the network converges, it becomes increasingly difficult to manage and monitor QoS and bandwidth allocations to demanding applications. Carriers also face increasing pressure to provide SLAs (Service Level Agreements) to assure end-to-end performance.

With gains in productivity and efficiency come cost-savings, and many companies have implemented these technologies. However, creating this infrastructure requires significant investment, and IT departments must still thoroughly research, test, and develop the converged network. Thoughtful selection of tools, connectivity, and vendors is vital, as is having skilled, experienced resources to provide for present and future technology needs.

## Project Management Software Selection *(continued from p.1)*

The buzzwords around PM applications today are Collaboration, Integration and Automation. Not just vogue concepts in vendors' marketing collateral, these are relevant considerations. How important are these concepts to your operations and management team? Understanding this helps define your team's character and their needs.

After surveying the organization, move to concrete elements—such as what the software can do. Functionality matters, but not in the way you might expect. More than any other application, your PM application will handle the tasks that are the bread and butter of your day-to-day operation. How this functionality dovetails with the organization's vital processes often predicts its

acceptance by people in the trenches. And users must be involved in the selection. Companies get more mileage from software selected by the people who will be using it.

Choosing the right PM application can be difficult. The starting point is hard to find given the wide range of needs and opinions, but the process can be successfully navigated. Assess and accept the nature of your organization and enlist core users to help make the decision. The choice they make often surprises everyone—including themselves.

## WAN Optimization *by Angus Frost*

Construction companies used to centralize information systems in one office and had limited connectivity and access from remote sites. But technology has changed how and where contractors work, and where and when they need information. Today's contractors are challenged to deploy and support core business applications across a wide area network, to regional offices, field offices and job-site trailers.

Ensuring availability and performance across the WAN is a common challenge for today's construction IT Manager. Access to large files across the network, reliance on email to transfer files between different groups, and the addition of video conferencing across the WAN all add to the complexities.

Traditionally, IT has increased bandwidth to improve performance. But the real culprit may not be solved by additional "pipe." Often email is misused as a means of sharing files; but it might be the only tool that users have, either because there is no easily accessible central file storage or document management system or because file security prevents a user from accessing a file. In these situations, people are using email to get around the inefficiency of other tools. But bandwidth use increases due to increased traffic, particularly when files are several megabytes and are sent to multiple recipients.

Another factor is network latency, the time data packets take to pass from one device to another. This affects performance and accessibility of applications and data, and adding bandwidth is unlikely to solve the issue. One alternative being explored by the AEC market is WAN optimization—essentially, a specially-tuned appliance at each end of the WAN link that minimizes the flow of unnecessary traffic and decreases the effect of network latency.

WAN optimization appliances—costs for which range from \$3,000 to more than \$15,000—can reduce network traffic by 80%. Installing them can simply mean placing one between each of the WAN links you wish to optimize, plugging in a network cable, and switching them on. Deploying this technology on a limited basis, this author experienced significantly reduced traffic and increased access to and availability of files and applications.

Typically, WAN optimization devices vary in size and cost depending on the number of users they are intended to support. Small appliances handle four to six users (perfect for a jobsite trailer); large ones handle thousands. They are pre-tuned to support a variety of functions, i.e. general WAN traffic, core business applications, or data replication (perfect for a disaster recovery site or co-location). Vendors include Juniper, Riverbed Technology, Packeteer, Expand Networks, and Cisco.

Among the advantages of WAN optimization is that email and file servers no longer need be deployed at individual locations. They can be consolidated in a corporate office or hosted data center. This reduces the equipment an IT department must purchase and support; it also simplifies backups, which in turn simplifies disaster recovery. In addition, data mirroring to a disaster recovery site (be it internal to the organization or a hosted co-location) becomes feasible across the existing network infrastructure.

Before increasing bandwidth, think about what problems you are trying to solve and know where your bottlenecks are. Then consider the potential benefits of WAN optimization.

# Tell me you're KIDDING.

**You ask a lot of your IT systems and processes. Can they carry the load?**

At Burger Consulting Group, we know managing IT at construction companies can be a challenge. Since 1997, we've provided strategic advice and hands-on expertise to general contractors, civil contractors, heavy/highway firms and a full range of specialty contractors.

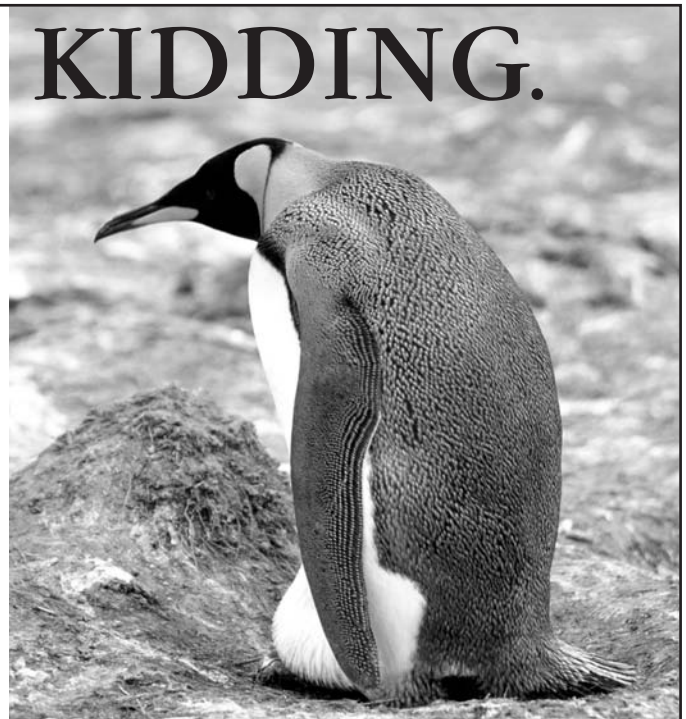
Burger Consulting Group can help you assess infrastructure, identify appropriate technologies, and implement systems and internal processes that improve performance. We understand industry best practices and work closely with clients to find solutions that fit their specific goals.

And because we're independent of software developers or hardware vendors, we can give objective advice on charting the best course for your organization.

Lighten the load. Call us at (630) 510-1875. Or e-mail [lreeves@burgerconsulting.com](mailto:lreeves@burgerconsulting.com).



**BURGER CONSULTING GROUP**  
*Information Systems Consulting to the Construction Industry*



IT Strategy

Infrastructure Assessment

Software Selection

Implementation Management

## CiMC User Conference

CMiC, a Toronto-based software developer for the construction industry, held their annual user conference in Tampa several weeks ago. CMiC has built an impressive customer base. At this year's User-Conference in Tampa, Gord Rawlins, its CEO, presented on its direction and customer service initiatives. Everyone was interested in the new software functions and equally in the company's customer services and QA/QC initiatives. The mood at the conference was excellent. Christian attended sessions on application developments and reconnected with BCG contacts who have become CMiC customers, including Summit Builders, Cianbro, Beck, DPR, HBE, Gerald H. Phipps, and Power Contracting. Many were there to learn about new developments in the product and organization.

## ConstrucTech Vision Awards

Perennially a panelist for the prestigious ConstrucTech Vision Awards, Christian was again a judge this year, invited by Specialty Publishing to evaluate submissions and score them for adherence to requirements, deployment, and the value realized. Nominees had different stories to tell, but shared common themes: Many were using technology to streamline processes, and to reduce duplication of effort and gain efficiency. Others were providing customers and employees better access to tools and information. But efficient data capture and processing was a clear stand-out. Interestingly, while risk management and cost control were mentioned, these were not the most common motivators for some leading companies. Primavera and Microsoft seemed to come away with most awards, while Timberline, Meridian, and Oracle were also recognized.

## Meridian Agrees to Trimble Acquisition

Meridian Systems has signed a definitive agreement to be acquired by Trimble, a leading multinational provider of advanced positioning solutions. The acquisition gives Meridian a long-term business partner, solid financial backing, and global reach. Meridian will continue to operate independently as a wholly-owned subsidiary.

## Our Professionals Present

BCG professionals are presenting at several upcoming industry conferences, including:

*November 15, 2006*

### CFMA Key Developments in Technology, Des Plaines, IL

- C.R. Burger, "A Critical Look at Systems within the Construction Industry"

*May 19-23, 2007*

### CFMA 2007 Annual Conference & Exhibition, Phoenix, AZ

- C.R. Burger, "Technology Trends & Developments for Construction"

*May 22, 2007*

### CFMA Heavy Committee, Phoenix, AZ

- C.R. Burger, "Special Topics in Automation and Technology for Heavy/Highway/Aggregate Companies"

*May 22, 2007*

### BCG professionals have also recently published the following article(s):

- C.R. Burger "IT Ambition for the Contractor," *Construction Executive*, Jan 2007.
- C.R. Burger "IT Staffing," *CFMA Building Profits*, Jan/Feb 2007.
- C.R. Burger "PM Software: Integrate or Stand-Alone," *Project Manager*, Winter 2006

## Discipline in Data Conversion

*by John Patridge*

Have you reviewed a software vendor's proposal recently? Seen a line item for "Data Conversion Assistance"? The key word here is Assistance, because what is proposed is just that: some measure of help, but not a full conversion.

Help is precisely what many people hope for with a data conversion. The process is highly stressful, because it has the potential to affect your implementation, training, and go-live experience in a significant, even negative way.

But that's no reason to panic. Successfully managing data migration may be hard work, but with attention to detail and discipline, companies can reduce much of the stress surrounding missed schedules, training deadlines, and design errors.

Considering conversion as a major sub-project of the implementation dictates assigning a schedule, budget, and resources as for any important project. Timing is critical; much depends on having enough of the system design in place to make necessary decisions. Waiting too long to begin overloads resources and impedes testing and training. Schedule carefully, and hold to critical milestones just as you would a go-live date.

A well planned infrastructure is fundamental to making the process efficient. Converting data is not a one-time event, but a process performed several times during implementation to refine and test the design as well as the data. Design the extraction routines, conversion programs, and documentation so that the process is easily repeatable.

Viewing the project as a temporary task tempts many people to take shortcuts. A time-eroded memory is the root of most errors when the final product is delivered. It is essential that the staff member leading the project has the self-discipline and skills to approach the task this way.

Finally, the entire implementation team should understand that the data conversion project is as much their responsibility as the person actually performing the extraction and data import. Often, the tedious task of mapping and verifying data is assigned to someone unfamiliar with the data, and the result is a rough start on the new system. Subject matter experts in each area know the data better than anyone and should be accountable for its migration. Framing the project as the subject area leader's with the data conversion leader as a resource is helpful in communicating the proper responsibility matrix.

Data conversion is manageable and success an achievable goal. Planning, structuring, and clearly defining responsibilities make it possible. Spend the time to organize the project and you will be rewarded for the effort.

## Selecting a CRM Solution *by Angus Frost*

Traditionally, construction industry business developers used various programs to manage contacts and relationships—including Outlook, Excel, ACT, and Goldmine. Largely, their choice depended on individual preference.

But BCG's clients are increasingly interested in sharing client and prospect information across their organization, standardizing business development and marketing. This leads directly to CRM applications. But identifying requirements for selecting a CRM solution can be difficult.

When selecting an accounting or project management system, organizations have business processes on which to develop requirements. When considering CRM, they likely do not. In addition, whereas the vendor marketplace for accounting and project management systems is clearly defined in the construction industry, a bewildering proliferation of CRM products and tools exists and those targeting the construction industry are not clearly defined. Several accounting system vendors have a CRM module as an add-on, but how well the add-on meets any specific organization's needs is not easily apparent.

To make selection easier, BCG recommends reviewing the following key areas. Though not a complete list, these should serve as a starting point:

### Contact Management

Though it seems obvious in terms of determining requirements, contact management bears consideration up front. Important contacts exist both inside and outside an organization, and knowing how you want to treat and track such contacts is vital.

Following are some initial questions that should be asked with regard to this module:

- What information do you need to track beyond basic address, phone, and email? Criteria could include position, industry, region, turnover, architectural and engineering vendors, etc.
- Do you want to track only those people that work at a particular organization, or should you include those with relationships with the organization, such as lawyers, board members, accountants, club members, etc.? Are these relationships at the company/organization level or the individual contact level?
- Who owns specific contacts? Can all users view all contacts and all information? Should certain details of certain individuals contact information be kept private, visible only to the person who created contact? How to manage permissions?

### Opportunity Management

Tracking opportunities is a frequent concern during CRM selection. Some organizations have invested significant money in their business development team, training them in standardized techniques such as Solution Selling.

These require that opportunities be tracked through a standard set of phases/stages; and the likelihood of an opportunity's becoming a project improves the further it progresses through these phases. Tracking this progression may be critical for some organizations, and not all CRM solutions can provide it. In addition, the detail that needs to be captured about an opportunity—such as the total value of the opportunity, square footage, industry, location, type, etc.—is important. Once tracked, all this information helps improve and drive proposal documentation. Another key component in a good opportunity management module is forecasting and pipeline reporting.

### Proposal Development

Accessing and generating proposal documentation can be a problem for regional offices or remote users. The ability to manage this important process through a CRM solution is an important but often overlooked item. Most marketing or business development departments use Adobe InDesign, Quark, or something similar to create their marketing material; but some use Microsoft Word. Considerations include:

- What support exists within the CRM product for these types of tools?
- Can standard documentation such as proposals, resumes, and project sheets be generated from within the CRM solution, using templates and data from the CRM system?
- Does the CRM system support remote access to finished documents?
- How accessible are the final documents?

### PDA and/or Outlook Synchronization

Not everybody in business development will have their laptop with them at all times. However, they are likely to have their PDA or cell phone. What capabilities exist for synchronization with either Outlook or directly to their PDA/Cell phone?

Many other functional requirements should be evaluated and documented before creating an RFP or RFI to submit to vendors. Understanding your prerequisites before opening selection to the vendor community is critical, especially in the CRM arena where vendor marketplace is so broad.