

## Tipping Point: The Case For Owner Adoption of Project Collaboration Tools

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### Overview and Context

Two trends have converged in the last year to drive adoption of Internet-based project management collaboration solutions by owners: 1) the changed economic climate, wherein all projects are more tightly scrutinized and controlled by owners and 2) the growing body of evidence that collaborative tools are providing significant benefits and ROI to owners. The result is that a number of owners in both the public and private sector are tapping into Internet based project management as a way to better control the outcomes of their projects.

We'll examine these trends in a moment but first it is instructive to review the history these systems. Since their introduction in the late 1990s, the *potential* of Internet-based Project Management / Collaboration (PM/C) systems has never been in dispute. Making the parties involved in a construction project more accountable through 'always-on', centralized communication is, in theory, obvious. The conventional wisdom was that buyers of construction services – owners – would see the wisdom and drive the adoption. This reasoning failed to take into account several realities:

- Most owners do not have sophisticated, *integrated* construction procurement programs.
- Most owners rely on outside consultants to perform these functions.
- Outside consultants often do not see the benefit to *their* firm in streamlining the design/construction process. The idea of making information readily available and transparent to the owner organization could be seen as troublesome.
- Even if they wanted to change, knowledgeable owners find it hard to 'teach old dogs new tricks' and this includes their contractors, consultants, suppliers, etc.
- Absent compelling proof (e.g. reliable ROI analysis), the safe bet was to stick with the old methods.

At the same time, the early adoption phase of PM/C systems showed that translating theory into practice was not quite so easy. A short list of problems include: the aversion of people to change their work patterns; the reluctance of parties to be accountable; outright rejection in some quarters to the idea of collaboration; perceived lack of security in using the Internet as a Wide Area Network; and importantly, vendors that promised much but delivered too little. These issues and more (whether real, imagined or a mix of the two)

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resulted in a 'drag' on actual utilization. This made it fairly easy to maintain the status quo and say that these systems 'did not work.'

News of these faster project workflows and process improvements began trickling 'up' to owners. A number of owners began piloting 'proof of concept' projects where they managed the PM/C application themselves and directed the means and methods of project collaboration to the project team. These pilot projects have given way to full-fledged programs and sustained use of PM/C Systems.

Meanwhile, a significant portion of the contractor community tried these systems. By late 2001, 40% of general contractors had tried project collaboration software, according to the Construction Financial Management Association's "2002 Information Technology Survey for the Construction Industry." The drivers for these firms were internal efficiency, cost and risk reduction and pursuit of competitive advantage. The actual collaborative nature of these systems – improving workflow and process improvements across multiple parties on a project – largely took a back seat. Nevertheless, a substantial number of firms, at least those using Constructware, began to see tangible and even compelling results.

News of these faster project workflows and process improvements began trickling 'up' to owners. Despite the effects of the post-9/11 economy, or more likely *because* of it, a number of owners began piloting 'proof of concept' projects where they managed the PM/C application themselves and directed the means and methods of project collaboration to the project team. These pilot projects have given way to full-fledged programs and sustained use of PM/C Systems.

### **The Tipping Point**

Fast forward to 2003. Economic and business imperatives make the *owner* case for increased owner use of PM/C systems even more compelling. These issues include:

- Increased project scrutiny by lenders and bonding companies
- An overall heightened sensitivity to downside risk in the private sector
- Increased sensitivity to cost and schedule issues on public projects, due to tighter budgets and over-taxed resources
- Increased scrutiny by the media and the public to cost over-runs on public projects, including a better understanding of the importance of adequate project controls

This change in the external environment is summed up well in the January 2003 analysis "Emerging Owner Trends in Capital and Facilities Program Delivery" from Fails Management Institute:

*“Real estate, design and construction and facilities maintenance business units are being asked by management to execute more projects and manage more capital facilities dollars with fewer internal resources. Understanding current liabilities and performance gaps and putting in place new strategies for buying and controlling design and construction services is essential to these owners’ future success. **The focus will lie squarely on improving return on investment.**”*

“The advent of collaboration tools has helped owners and their suppliers cut time and cost out of the delivery process by making sure the right people have the right information at the right time to make the right decisions.”

### **Growing Body of ROI Evidence**

At the same time that economic factors are pressuring owners, a body of evidence is building that these PM/C systems do indeed work. A number of owners in both the public and private sector are tapping into Internet based project management as a way to better control the outcomes of their projects. The changing sentiment is reflected in recent articles.

*The advent of collaboration tools has helped owners and their suppliers cut time and cost out of the delivery process by making sure the right people have the right information at the right time to make the right decisions. These tools have also improved accountability in the process, making it clear which firm isn’t answering RFIs in a timely manner or who dropped the ball on an important action item.*

- “Emerging Owner Trends in Capital and Facilities Program Delivery”  
Fails Management Institute January, 2003

*One of the top issues for owners is making better use of technology. “Information and knowledge management is one of the top priorities for our members,” says Kenneth Eickmann, Executive Director of the Construction Industry Institute, Austin TX. “There’s a lot of information available on a project, but owners want to be able to extract the usable knowledge from this available information to make informed decisions,” he says.*

- “Owners Turn Up the Heat,” Engineering News-Record, (11/11/2002)

### **Measuring ROI - New Methods Emerge**

One challenge that has held back recognition of the benefit of these tools is the difficulty in developing accurate ROI measures. Constructware has been working since mid 2002 on developing repeatable, transparent methodologies for analyzing ROI.

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Areas where owners are seeing significant ROI from use of Constructware include:

- Revenue from early occupancy
- Interest savings from early occupancy
- Significantly reduced IT hardware/software savings
- Significantly reduced labor burden on IT staff
- Improved Change Order Management
- Administrative, travel and overnight delivery charges
- Litigation and discovery expense savings

Owners and others who are interested in measuring their potential ROI can learn more by contacting Constructware.

### **Who's Keeping Score?**

One of the most important but rarely expressed factors underlying the shift in 'ownership' of PM/C tools is the growing belief by owners that they can no longer rely on the Contractor or Construction Manager's information systems for project tracking and control. This is a controversial issue, but it is fundamental to understanding the 'why' of owner interest in PM/C systems.

A growing percentage of owners are coming to understand that the entity 'keeping score' has an advantage in the negotiations that stem from a project or program. Historically owners had little choice but to rely on the control systems of their program manager, construction manager or other outside consultant. Alternative technology was not available. With the rise of Internet-based tools, the ability to monitor 'the books' has become so easy as to be an annoyance to a certain percentage of the construction community. It is not uncommon now to hear the comment, "We're an open-book contractor but we don't want to be *that* open-book." This is an indication of the new type of contractual relationship that is possible. It represents a shift in power *toward* the owner — for owners who have the will to make it happen.

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In the construction industry, of course, no one ever loses by betting on the status quo. In fact, many owners are content to rely on the reporting tools of the contractor, construction manager or program manager. This is summed up in the sentiment: "That's what I pay them for – to manage the project." And you'll hear no argument from the contractors on that score. However, as the post-9/11 economy settles in and the climate of heightened scrutiny shines light into the

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traditional methods of the industry, this reasoning may lose some of its appeal.

Interestingly, however, even when an owner is not the driving force behind use of PM/C tools, they typically benefit. This is especially true in the minority of projects where a true collaborative atmosphere has been established, either through contract language, ongoing business relationships, personalities or all of the above.

But for most owner organizations, particularly those that rely on traditional hard bid contracting methods (that essentially pit the project team parties against each other), there is a strong case for adopting an owner-managed PM/C system and mandating its use by the parties. Key factors that support this approach are:

- The reality that owner facility and in-house design/construct staff will be understaffed for the long term, thus they will need to rely on outside consultants to manage the work
- The growing body of evidence that owners can maintain effective oversight of project or program teams through use of PM/C tools, where the project team is responsible for data input as part of their contract terms
- The proven availability of Internet-based PM/C tools that are cost effective and can produce ROI within a year. The technology is no longer a bottleneck - efficiencies in the design and construction process are available if an owner organization is ready to bring about the change

The body of this white paper discusses examples of how owners are benefiting from various types of uses of PM/C systems on projects and programs.

## **1. Hudson River Park Trust (HRPT)** **A Joint Venture of the City and State of New York**

### **Background:**

The returns are significant. Phase I has opened earlier than anticipated, placing HRPT at the pole position for receiving additional funds from the state. The tangible benefits have been matched by a few intangibles, including changed mindsets on the part of early skeptics, including Trust CEO Balachandran.

Hudson River Park Trust is a \$380 million, multi-year program to transform five miles of West Manhattan waterfront docklands into a series of parks and public spaces. The program consists of 42 projects grouped into seven phased segments. When fully completed later this decade, the 550-acre parkland will extend from Battery Park in lower Manhattan to West 59th Street. It is New York's largest park project since Central Park in the mid-1800's.

### **Challenge:**

With more than 100 companies working on the project, HRPT would be competing for funds with other New York projects. HRPT CEO Robert Balachandran was well aware that the city would need to see tangible results before it would commit additional funds into future phases. Effective communication between collaborative parties was essential to achieve the desired productivity and schedule results.

But Balachandran had seen collaborative project management tools before, and he was skeptical of anything making a significant contribution. "I figured there was nothing out there that could help us manage something of this magnitude."

HRPT started using Constructware as a pilot program in early 2001 and ran into problems quickly due to lack of buy-in from the end users. "Consultants and contractors wanted to avoid Constructware because it was new and different from the way they had done business," says HRPT IT Manager Michael Breen. "They were close-minded, and had fears of sharing the knowledge base."

### **Solution:**

HRPT soon realized that, for end-user adoption to occur, it would have to be driven from the top down. "In late 2001, we began specifying the use of Constructware in all contracts, something we should have done from day one," says Breen. HRPT also designated an internal champion - someone who would be responsible for implementing Constructware and scheduling regular training sessions throughout the project. "Training was key," says Breen. HRPT scheduled Constructware trainers to teach more than

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100 end users and staff in classroom environments, and supplemented the classroom training with follow-up sessions online.

The training investment was complemented by the hiring of a new Constructware administrator to oversee license distribution, assigning permissions, and to serve as primary Constructware contact. After the Administrator was hired, Breen says "utilization soared" from six users at six months into the project, to 100 users after a year, and 230 users two years later. Already, more than 17,000 internal messages and 10,000 correspondence letters have been exchanged in the HRPT's Constructware site, saving untold amounts of time through centralized documentation. And time is not the only resource that has been saved. "One of our architects has used Design Collaboration to host its CADD drawings. This has reduced travel and postage charges because three offices in New York, Boston and Watertown N.Y. are collaborating on the design."

The returns are significant. Phase I has opened earlier than anticipated, placing HRPT at the pole position for receiving additional funds from the state. The tangible benefits have been matched by a few intangibles, including changed mindsets on the part of early skeptics, including Balachandran. From the CEO on down, HRPT's foundational success is not in using Constructware alone - which they had done from the beginning, but in HRPT becoming the driver behind the adoption and application.

Having faced the resistance, they are now enjoying the domino effect as many collaborating companies on the project are coming to understand the benefits an Internet-based system can deliver. "Our Construction Manager was managing their documents through their own proprietary client-server based software," says Breen. "After they became familiar with Constructware they abandoned their system completely."

## **2. 10,000 Service Station Re-Imaging Program BP America, Bovis Lend Lease Global Alliance**

### **Background:**

As part of its acquisition of Amoco, BP undertook a fast track program to 're-image' more than 10,000 BP and Amoco stations in the United States with the new BP brand.

The transformation began in early 2001, re-imaging an average of 50 stations per week for the next 4-years. The Global Alliance, a partnership between Bovis Lend Lease and the owner, BP America manage the \$600+ million program.

### **Challenge:**

"The sheer magnitude of this thing: 2000-2500 sites a year – that's a lot of orders to process," says Mark Napier, Systems Manager for Bovis Lend Lease. "We had to have the accountability."

*Napier knows about the need for accountability because he observed the materials requisition process at the beginning of the project – a manual process with little workflow automation and even less accountability among suppliers. Constructware, while available for use, had not been fully implemented and early collaborators were not mandated to use the system. Bovis would fax manual orders directly to the suppliers, and contact them a few days later to confirm delivery date. Frequently, suppliers would claim that they never received the fax. "We were already out of the chute," he says, "so we learned the hard way."*

Bovis and BP circled the wagons, and met in Chicago in late 2000 to discuss a better way. As Napier recalls, there was a lot of discussion about which technology to use, including one Project Manager's suggestion to use PDA's (Personal Digital Assistants) as the primary component for improving the collaboration process. With so many tools and options, it became more evident that the process itself – one that stood independent of the technology – needed to be established first. The technology could then follow as the natural mechanism for executing the right process.

Napier went back to the drawing board and spent the better part of a week re-engineering the process for the BP Re-imaging project. The next steps became almost automatic. "What some of us thought was key (e.g. PDAs) ended up being a moot point. In taking a hard look

Since taking ownership over the process and mandating the use of Constructware, the measurable benefits have more than justified the change: As of late 2002, Bovis had automated 70% of its workflow, saving more than 12,500 administrative hours, and eliminating more than 9,000 material requisitions and approximately 13,000 pieces of paper. The re-engineered process has enabled a 69% increase in production capacity compared to 2001.

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at the process, we were able to apply the technology where appropriate, not just applying technology for the sake of applying technology. After I flowcharted it I saw that Constructware would bring value to the process.”

Following the decision to fully utilize Constructware, the next challenge was to prepare the early-phase suppliers for the change. Napier had a 20-minute meeting with all of the incumbent suppliers and asked them two key questions:

- *How many of you are prepared to process 2500 manual orders per year, with changes?*
- *How many of you are open to doing it a better way – streamlining your processes?*

“Everybody raised their hand,” said Napier, “so I told them, ‘Here’s what we’re going to do.’”

### **Solution:**

Bovis scheduled Constructware to provide on-site training and implementation to all the suppliers and Bovis personnel on the project. The private training was followed by online review sessions. Depending on the learning curve, some online sessions had multiple companies at a meeting; sometimes the sessions were one on one. “Whenever they (suppliers) called with a problem we’d drop everything to respond to them quickly so they wouldn’t have a chance to get frustrated,” he says. “In time the phone calls for help started tapering off.”

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And although the process was changed in the early stages of the project, getting buy-in from all collaborators still has its challenges. “The biggest obstacle is getting people to embrace a re-engineered process without having any experience to draw from,” says Napier. “What Constructware did for us, besides being a technology enabler, was it allowed us to re-engineer our process.”

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Napier claims another value-add in using Constructware, which allowed Bovis to cut the fat off the supply chain, going from four warehouses and dozens of suppliers to a re-bid that ended with one national distribution warehouse and a handful of responsive suppliers. He says there's now a much different response that evolves from the previous dilemma with disappearing faxes. "A couple of suppliers would test the waters and say, 'you know, I didn't get that email you were talking about,'" Napier recalls, "so I would read back to them my return receipt in Constructware with the time and date they opened the email. Soon, they were running out of excuses for not being able to deliver. That's when we made the strategic decision to re-bid all major supply items, and brought on companies that could handle the demand."

The willingness of BP and Bovis Lend Lease to do a re-evaluation of their processes on the BP Re-imaging project has given the joint venture favorable recognition in the industry, earning them a Constructech 2002 Vision Award for Team Collaboration in October 2002. But the award is only a fringe benefit compared to measurable results. With Constructware as the delivery mechanism, the new process has enabled a 69% increase in overall production capacity, compared to 2001.

Napier has an analogy for the vast improvement he's seen in less than a year – one that speaks to the leadership component that must be applied equally with a new process and process-fitting technology. "If you've been driving to work the same way for 10 years, and I tell you that I have a shortcut that will take 15 minutes off your commute, there's a good chance that if I just give you the directions, you won't take my advice and risk getting lost and being late."

"But if I say, 'You follow me and I'll *show* you the way, you'll take the risk."

### **3. Indianapolis, IN Public Schools 10-Year Capital Improvement Program**

#### **Background:**

In conjunction with Program Manager Schmidt Associates, Indianapolis Public Schools began in September 2002 on a decade-long \$832 million capital improvements program. Every elementary, middle and high school building in the state's largest public system will be improved through a combination of new construction and renovation/expansions, including life safety upgrades, new science labs, and enhancements such as improved air conditioning units. The first phase of the program is scheduled for completion in 2006, with second phase completion in 2011.

#### **Challenge:**

Future allocations and budget considerations for phase two rested with the successful implementation of phase one improvements. As such, the need to avoid unnecessary delays or program bottlenecks was essential. Effective collaboration was seen as an antidote to this challenge. At the same time, more than 13 AE Firms, nine construction managers, multiple contractors, and an army of consultants – many of which had their own client-server applications – would be working on the project from day one. These program participants, as well as an external constituency of school administrators, teachers, and parents, needed to stay abreast of certain projects and the program's general progress. The project called for one, internet-based mechanism to meet the information needs of these multiple publics.

IPS made the strategic decision to mandate the use of Constructware, including it in all third party contracts. "We chose Constructware before we even considered hiring anyone, so the contracts were written with its use in mind," says Debra Kunce Program Manager for IPS.

#### **Solution:**

Taking into account the length of the program, IPS and Schmidt Associates wanted a tool with a stable platform – an application whose structure and Internet model would remain consistent throughout the length of the project. In March 2002, they purchased Constructware as the project management and collaboration tool for the ten-year capital improvements project.

Following the purchase, IPS made the strategic decision to mandate the use of Constructware, including it in all third party contracts. "We chose Constructware before we finalized hiring anyone, so the contracts were written with its use in mind," says Debra Kunce, Program Manager for IPS. Kunce places special emphasis on the owner being the driver behind the implementation and adoption of

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Constructware. "It's absolutely critical. Adoption must start from the top – always. If we use it we can hold other people accountable for using it as well."

To facilitate ease of use, IPS scheduled Constructware trainers to do on-site training, conducting half-day sessions for an entire week to give the end-users some flexibility in coordinating their schedules. Sessions were held at an IPS facility, and each end user was given his or her own computer during training. In-house training was followed by private, one-on-one training sessions conducted over an online meeting service. The private sessions were for users who may have had little previous exposure to computers and, for one reason or another, were slow getting up to speed. "Much of the resistance comes from many companies with their own existing processes," says Kunce. "We agreed that while there might be a learning curve, things would still run smoother in the long run."

For companies or end users who still find online collaboration a challenge, IPS retains an IT Consultant who is always on call to answer questions or troubleshoot problems. Kunce points out that because Constructware is entirely internet-based, with no unnecessary client-server requirements, the consultant spends most of her time becoming more familiar with the application's features. "She's freed up to explore the tool and its functionality, not having to deal with a host of hardware issues."

Because Constructware users need only an Internet connection to log in, "I can't imagine going around and asking people to install software," says Kunce. "And besides I can login from home," or from an Internet Coffee shop, as the IT Consultant did to check in during a recent vacation. Kunce adds that server glitches have already affected one of the program contractors who could not access their company's internal email. "It forced them to abandon their system and use Constructware's internal messaging."

Since no two projects are alike, Kunce says it's difficult to put a number on how much time and money has been saved so far on the Capital Improvements Program. "There's nothing to which it can be compared," she says. But as IPS begins to move from design to construction in Phase I, she is convinced of its value as a project management tool, and many of the users are becoming convinced as well. "One of our construction managers is into the construction side, having already used Constructware's design collaboration tool. They have a project coming up in June, and they know it's going to be a breeze the second time around."



*About the Author*

**Scott Unger is Cofounder, President and Chief Executive Officer of Constructw@re, based in Alpharetta, Ga.**

*Scott Unger is a nationally recognized leader in the field of Information Technology in the construction industry. With more than 19 years of experience, he is a featured speaker at national technology conferences such as the A/E/C Systems Show, has authored several articles and white papers on technology trends in the industry, and speaks at numerous local and regional gatherings each year. He formed Emerging Solutions, Inc. (ESI), in 1994 after serving more than ten years as a technology consultant to the construction industry developing customized project management software. ESI introduced the construction industry's first Internet-based project management, collaboration software application in late 1997, which was re-branded as Constructw@re in 1999.*

*Mr. Unger's background includes extensive construction operations experience: during the late 1980s and throughout the 1990s, he was co-founder and a principal with Nix-Unger Construction, Inc., a commercial subcontracting firm in Atlanta. Mr. Unger is a board member of the Associated Builders and Contractors, Georgia Chapter. He graduated from Tulane University with a B.S. degree in Computer Engineering.*



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