

PREMIERE ISSUE | SPRING 2002

PRIMAVERA[®]

PROJECT SUCCESS = BUSINESS SUCCESS



Allegheny Power's
Bob Slebodnik:

Change
is the
constant

start-to-start



Welcome to *Primavera* magazine!

Today, as projects are achieving greater importance and visibility in the business world, new demands are being placed on the management teams that plan, execute and control them.

Therefore, it is with great pleasure that I announce our newest source for project management information and insight, *PRIMAVERA: PROJECT SUCCESS = BUSINESS SUCCESS*.

Published quarterly, *Primavera* magazine brings you the latest news from Primavera Systems, along with in-depth feature articles and columns designed to help you manage your own projects and bring them to successful completion.

In each issue, we'll go inside leading corporations and government agencies to uncover how your peers and colleagues are succeeding with Primavera project management software within their own environments. We'll share with you how our partners, customers and solution providers are working with software from Primavera Systems to deliver projects on time and under budget. We'll also talk with some of the prime movers who are influencing project management trends, and ask them to share their best practices. And, on the lighter side, the back page in each issue will provide a little "free float" with stories on golf, art, travel and other lifestyle topics.

But, our ultimate goal is to bring you the kind of magazine that *you* want, with stories and solutions that you won't find anywhere else. A new addition to our Website, www.primavera.com/mag, makes it easy to send us your comments, make suggestions or let us know when you think we've missed the mark. It's also a convenient one-stop resource to access and download any of our articles, request a subscription or update your address.

As "management by project" is becoming a global anthem, we hope that the information in *Primavera* magazine will help you to stay ahead of the latest trends and technology, because PROJECT SUCCESS = BUSINESS SUCCESS.

I hope you enjoy this premiere issue of *Primavera*. •

A handwritten signature in black ink, appearing to read "Joel M. Koppelman". The signature is fluid and cursive, with a large loop at the end.

Joel M. Koppelman, CEO

PRIMAVERA

PROJECT SUCCESS = BUSINESS SUCCESS
Volume 1, Issue 1, Spring 2002

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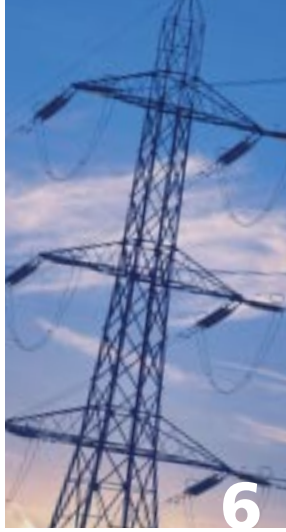
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Shifting populations, unpredictable weather conditions, zoning changes and vendor delays are all in a day's work for this busy project coordinator.

By Robert J. Bannar



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Cover Photo: © 2002 Michael Ray

PRIMAVERA postings

Primavera, Ernst & Young Announce Strategic Vendor Relationship

Construction Advisory Services Group set to implement and help enhance Primavera PrimeContract

Primavera and Ernst & Young LLP, the leading construction advisory service among the “Big Five” professional services firms, have teamed up to implement and provide input on enhancements for Primavera’s Internet-based project management applications and services.

Ernst & Young’s Construction Advisory Services Group will use Primavera PrimeContract to enable its clients to establish best practices and improve communications across multiple teams and projects, aimed at reducing project costs, delivery and risks.

“In today’s market, best-of-class technologies are essential to monitor and control the planning, design and construction processes and to help ensure that clients receive what they purchase on time and within budget,” says John Heffron, national director of Ernst & Young’s Operations and Construction Advisory Services. “Primavera solutions are the industry standard for project planning and control, so we are pleased to adopt PrimeContract and its other Web-based solutions [from Primavera] to deliver value, collaboration and efficiency to the owners and operators of major capital projects.”

Primavera In the News

Prestigious Support Center Practices Certification Awarded to Primavera

Primavera Systems is the only project management software company to achieve the highly regarded Support Center Practices (SCP) Certification for excellence in delivering technical support services to its customers.

SCP Certification quantifies the effectiveness of customer support centers based upon a stringent set of performance standards, and represents best practices in the industry.

Primavera Receives National Award for Outstanding Customer Service

Primavera Systems has been named a 2001 recipient of the Omega NorthFace Scoreboard Award for exemplary service to customers.

Presented annually by Omega Management Group Corp., Chelmsford, Mass., the NorthFace award is presented to companies whose senior management demonstrates an ongoing commitment to exceeding customer expectations. Categories measured include technical support, field service, customer service, account management and training.



“The economic downturn of 2001 and the impact of September 11 are driving companies to work more efficiently with fewer resources, bringing the need for consolidated project management to the forefront.”

– Margo Visitacion, director, Giga Information Group, *IT Trends 2002: Project Organizations, Enterprise Project Management and Professional Services Automation* report.



TeamPlay 3.0 Now Available

New release offers IT organizations the ability to gain visibility and control over their corporate IT and software development projects.

Version 3.0 of Primavera TeamPlay is now available. TeamPlay Web-based project management software helps IT organizations make project portfolio and resource management decisions by meeting the specific needs of project managers, resource managers, team members and executive sponsors of projects and programs.

TeamPlay 3.0 allows an enterprise-wide perspective on project, process and resource management, so that risks are identified as soon as possible, and key resources are used on the projects with the greatest payback.

Key features of TeamPlay 3.0 include:

- ▶ Web-based project management and resource control with Primavera Primavision;
- ▶ Web-based project portfolio analysis with Primavision;
- ▶ Improved Microsoft Project 2000 consolidation;
- ▶ Multiple currencies;
- ▶ Advanced scheduling options.

Telelogic, Primavera Launch PMConnex

Provides single interface to manage system requirements and project workflows.

Primavera Systems and Telelogic have announced a partnership to provide software development project teams with a simple way to manage system requirements and project workflows through a single interface (See *Telelogic's Bill Shaw Sees New Focus on Requirements Management* on page 13).

PMConnex integrates Telelogic DOORS with Primavera Enterprise and Primavera TeamPlay project management software suites, enabling users to enter or add data on either company's application, and to update it in both environments. Using PMConnex, project plan information, including work breakdown structures, will be linked directly to specific system requirements, allowing project managers to assign tasks based on specific development needs, and readily report on progress.

"The pressure to improve time to market drives all of us to improve reaction times and get it right the first time," says Bill Philbin, senior vice president global product operations at Telelogic. "This integration between Telelogic DOORS and Primavera software creates a two-way information flow between the project schedule and the business requirements."

PMConnex is available directly from Project Management Centre (PMC), Ottawa, Canada. Further information is available from PMC at www.pmc.ca.

events

Look for Primavera at the following events:

April 29-May 2

Gartner ITxpo, San Diego, CA

May 6-9

CIO Forum Financial Services, New York, NY

May 7-10

NPRA Maintenance, San Antonio, TX

May 12-15

ASUG, Anaheim, CA

May 13-19

Project World, Boston, MA

June 2-6

SuperComm, Atlanta, GA

June 4-6

AEC Systems, Anaheim, CA

June 23-26

AACE, Portland, OR

October 20-23

2002 Primavera Users Conference, San Diego, CA

November 5-7

Computers for Construction & A/E/C Systems Fall 2002, Dallas, TX

(Subject to change)

For more information, visit www.primavera.com/events.



For Allegheny Power's Bob Slebodnik

The shockwave of deregulation that visited the utilities industry in recent years promised new lines of profit to utility suppliers, along with increased services and lower costs to consumers.

Left holding the plug to that connection, however, are the people whose job it is to bring those products and services to delivery. Today, they are faced with a whole new array of challenges in an industry that was already governed by change.

In addition to the ongoing maintenance and upkeep of existing generation and delivery systems, they have to design and deliver utility services to new communities and businesses while keeping pace with the evolving needs of existing customers and communities.

For power providers, such change has placed increasing emphasis on the management of manpower and materials. (Most major utility companies commonly maintain an ongoing database of several hundred projects annually.)

Just ask Robert (“Bob”) Slobodnik, PE. As project coordinator in Allegheny Power’s Engineering & Construction Projects Group (E&C), Greensburg, Pa., it is his job to oversee

the system that manages all of E&C’s scheduled construction projects for both new and existing sites.

“Traditionally, we address the continued maintenance and expansion of the power grid’s lines and substations,” he says. “Typical projects call for adding a transformer or a line terminal to a substation, or maintenance projects, such as replacing a transformer. A major project could entail installing a new high-voltage transmission line over a few miles, or perhaps, building a new substation.”

New opportunities, new challenges

With deregulation, Allegheny Power is able to offer prospective customers professional services once available only to in-house projects – planning, estimating, design, project management, procurement, and construction services, to name a few. These projects differ especially in that their arrival is totally unpredictable and that they are open to competitive bidding. Because the company’s resources are already fully allocated, serious thought must go into both designing a winning bid and to adjusting existing workloads so as to not overload the staff.

A century of service

Established more than 100 years ago,

Allegheny Power today provides energy to 3.5 million people, most of whom live in the small- to medium-sized cities and towns scattered in a 31,000 square mile area that centers in Pennsylvania, and blankets parts of Maryland, Ohio, Virginia and West Virginia. In addition, thousands of commercial and industrial customers are connected to the network. To serve its customers, Allegheny Power operates and maintains more than 950 substations connected by over 4,500 miles of high-voltage (138 kV and above) transmission lines.

From the title of Slobodnik’s department, Engineering & Construction Projects, it is obvious that this group works in a highly project-oriented environment. Typical of the industry, about 50 of Allegheny Power’s 3,500 employees are in the E&C group, sharing the annual demands of approximately 300 ongoing projects. They might range in duration from three months to three years, and cost from \$10,000 to \$10,000,000 or more. Individual project plans can have as few as five or as many as 50 activities, each with from 15 to 175 steps.

All in a day’s work

But rarely do things go exactly as
continued on page 10

Change is the constant

Shifting populations, unpredictable weather conditions,
zoning changes and vendor delays are all in a day’s work for
this busy project coordinator.

By Robert J. Bannar

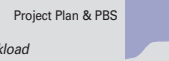
Allegheny Power's E&C Projects Group

START

Project Sources:

Planning

- Generally > \$100K; about 60% of workload
- Compiles a list of all planned system work for the next year
 - Issues project plans with scope, cost & in-service date defined for that work
 - Also initiates plans throughout the year as required work emerges



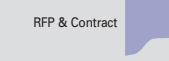
Operations

- Generally < \$100K; about 30% of workload
- Compiles a list of all maintenance & line work planned for the next year
 - Issues work request via spreadsheet including brief scope & in-service date
 - Also initiates work requests as new required work emerges during the year



Marketing

- Budgets vary; about 10% of workload
- For the bid process, a quote request is initiated via form & phone call
 - Initiates actual work request by submitting a contract with statement of work, budget & completion date



Project Initialization

General Management (GM) Team

- NOTE: Planned work is directed to the GMs as a team. Unplanned work requests are directed to the appropriate GM based on functional skill required for the work request
- Reviews requested work scope and skills needed
 - Reviews role/resource profiles for availability
 - Assigns project team leader and team based on skill requirements and availability
 - Forwards project information to project coordinator

Project Coordinator (PC)

- Creates new projects in P3e using templates
- Enters project codes, milestones & resources
- Notifies team leader project is ready to tailor



Project Team (Bi weekly - required by Saturday, Midnight)

In Progress Reporter:

- Review all activities and assignments
- If primary resource, update start & finish dates, expected finished dates, and steps completed
- Enter remaining labor manhours
- Open timesheet for appropriate period
- Enter hours worked on each task for 2-week period & submit timesheet
- (If applicable, add overhead tasks to timesheet & review notes and reference documents)

Note: If problems arise with impact to scope, budget, or schedule, notify the TL for resolution ASAP



Team Leader (Monthly)*

- Apply actual labor hours to project (Note: Although PC does this biweekly, TL can do so when desired)
 - Re-calculate project schedule
 - Analyze past period performance for schedule, budget, & resource variances
 - Analyze forecasted schedule, resource, & cost
- *Typically monthly; may be different for external customers*

Team Leader with Team (Monthly)*

- Re-evaluates schedule, budget & resource information
- Runs what-if project scenarios
- Updates project schedule
- Re-calculates the project schedule
- Develops a recovery plan
- Revises Project Breakdown Structure (PBS) as needed

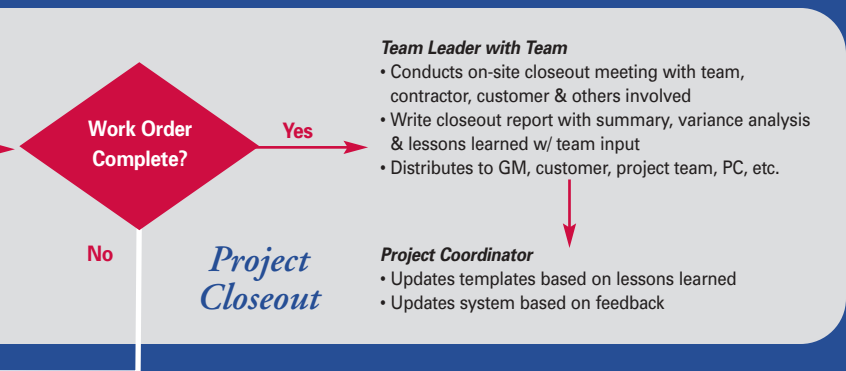
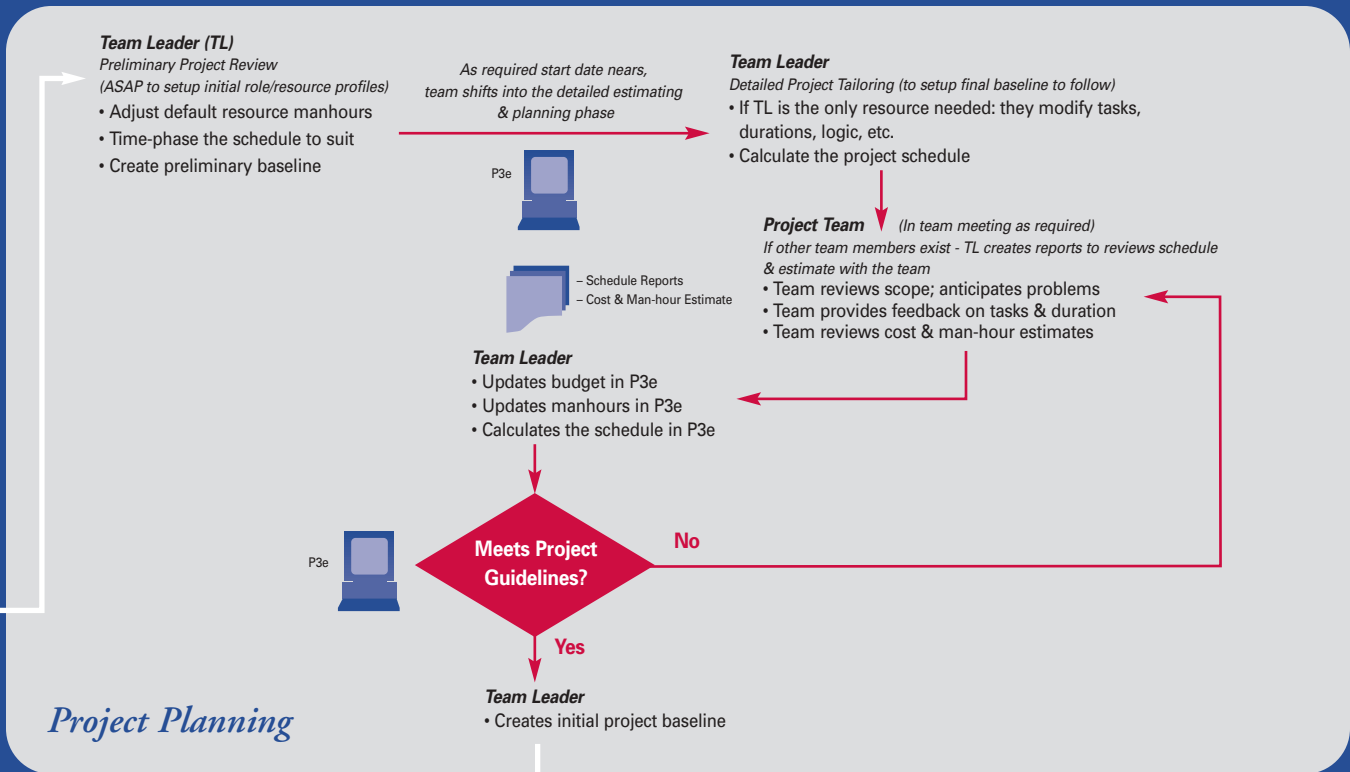
If project guidelines cannot be met by a few iterations & this loop cannot be exited, the project must be reviewed with management & the customer to redefine the schedule, scope, or budget and the project must be re-baselined for a major scope change.

Meets Project Guidelines?

- Team Leader**
- Creates project period baseline
 - Publishes monthly report
 - Posts data to project Website (*future*)
 - If needed, request revision to the Asset Management Project Budget System

Project Execution

Project Management Flowchart



**E
N
D**

continued from page 7

planned, and during the execution of a project, something may come up that changes its scope, schedule or cost. A construction crew might hit rock or poor soil, for example, or an outside supplier may fail to deliver materials on time. Sometimes there may be unforeseeable obstacles, such as the unseasonably frozen ground of an early winter or late spring. Then there are those unexpected zoning approval challenges.

“External influences, such as rights-of-way or property purchased in fee, can interrupt your progress at any time,” Slebodnik says. “Often, you have to relocate, negotiate tougher or shift things around. Another source of delay is simple politics. Public hearings required for approval could seriously affect schedules. And you don’t really know what you’re up against until you get there.”

When such delays occur, the project plan and schedule has to be redrawn, and it has to be done in a manner that will allow the pieces of that project to continue to fit into the company’s overall project puzzle. And this is where project management power is most valuable.

Welcoming change

Slebodnik is no stranger to challenge or change. With Allegheny Power for more than a quarter of its existence, he joined the company in 1975 after graduating from the University of Pittsburgh. Since then, he has piloted roughly 235 projects to completion – everything from site selections, to equipment additions and replacements, to installing new stations. “My biggest project as a team leader,” he recalls “was the construction of Baker Substation in West Virginia. It involved installing a 138 kV line about 14 miles long to a substation

that dropped to 12 kV distribution for local customers. These projects typically take about two to three years to complete, but we successfully completed it in less than one.”

This was made possible through a

outgrew each new tool.

Then the E&C Group was introduced to a new product from Primavera Systems – P3e, a component of Primavera Enterprise, which offers several significant improve-

...small improvements throughout individual projects are adding up to big improvements at the overall enterprise level.

number of creative efforts. The project was put on a “fast track” to reduce power outages to the very rural area. Additional resources were added, such as deploying four real estate representatives – there is usually just one – to buy the line right of way. Innovative techniques to shorten the construction time were also employed. For example, a helicopter was used to set wood line poles on the rugged mountainous terrain, cutting installation time from weeks to days. And the project was managed with Primavera Project Planner (P3), the industry standard for complex construction, maintenance and turnaround projects.

The results? “The line and substation were energized a day before the project’s absolute late due date, and at 1.2 percent under budget,” says Slebodnik, smiling.

Enter P3e

Working through the ranks of engineer and team leader, to his present responsibilities as project coordinator, Slebodnik has seen the company migrate through several project management tools, beginning with a schedule-only Project Management Information System (PMIS) installed in the mid-70s. And he watched as the company and his department

ments over the existing project management software. P3e has a database-type structure for coding, sorting, searching and rolling up information across all projects, as opposed to the file-type structure of P3.

P3e is a comprehensive, multi-project planning and control solution that unites project managers, team members and other stakeholders within the project communication and feedback loop. It is designed to help companies improve project execution and predictability, and enable them to respond quickly to change. It also helps neutralize the risk of taking on new projects by evaluating projects individually, in relationship to other projects, and in accordance with overall strategic initiatives.

“This is just what we were looking for,” Slebodnik says, “a true enterprise application that we can use not only from the project management or team leader perspective, but where management can get in there and see things the way it wants to. It’s all the same data, but the team wants to look at one project, and management wants to look at all the projects.”

So, in the spring of 2001, E&C put P3e to the test, and with rather remarkable results. By September, 2001, after only a few of the 50 active



“pilot projects” had gone through the full cycle of Initializing, Planning, Executing, Controlling, and Closeout, the remaining 250 active and planned projects were already being entered into the system.

As is to be expected, project activities are not shorter or less costly, nor do they require fewer resources. After all, it still takes the same amount of time to turn a screw. However, Allegheny Power is gaining valuable savings in project setup, execution and reporting time – and, most importantly, in dealing with change. The net effect is that small improvements throughout individual projects are adding up to big improvements at the overall enterprise

level. Remarkably, the E&C group’s projected savings, estimated across the full complement of annual projects, are projected to reach \$270,000 and 3,000 manhours.

Templates do the trick

One of the keys to this success, Slebodnik points out, is the use of templates. Using the P3e software, the E&C group was able to design twenty basic project templates – as opposed to just four with the previous software. This created a starting point from which teams can quickly build and modify a schedule that is already about 80 percent on target at the outset, rather than create a new project plan from scratch. And the Activity Wizard,

a tool built into P3e, simplifies tailoring that last 20 percent, he says.

“The templates give you a good starting point because you can cut, copy and paste from other templates to build a project. The main activities, the logic, the relationships, the leads and lags, and the duration of the activities are already there, as are the generally required resources and manhours – just about everything but the dollars in the budget,” which Slebodnik says can swing widely based on the scope, who’s supplying the material and so on.

Another enhancement available with P3e is the ability to create an effective closeout strategy. Previously, the lack of formal closeout reports broke the feedback loop through which lessons learned – successes and failures – could be incorporated into the system so that mistakes could be resolved rather than repeated.

“We’ve instituted a closeout report on major projects,” Slebodnik explains. “When all the project work is done, we step back and take one big look and evaluate the entire project. We look at the variances and determine what may have caused them. Then we document the lessons learned and integrate them into the templates so mistakes are not repeated.”

Project management power

But perhaps the biggest advantage of implementing P3e is that people throughout Allegheny Power – from the project management team to corporate management – have quick access to the information they need to plan and execute future projects and budgets in an ever-changing world.

Now that’s project management power. •

Robert J. Bannar is a freelance writer based in the Phila., Pa. area, specializing in business-to-business topics. He can be reached at rbannar510@aol.com.



Eliminate PROJECT SELECTION Guesswork

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Telelogic's Bill Shaw Sees New Focus on Requirements Management

► In this issue, editor Linda DiBiasio sits down with Prime Mover William Shaw, Director of Field Products Marketing, Telelogic, North America, for his thoughts on the changes in the field of requirements management.

Bill also discusses the benefits of PMConnex, a new interface that integrates Telelogic DOORS with Primavera TeamPlay and Primavera Enterprise, creating a two-way information flow between project schedules and business requirements.

LD: What is driving the increase in demand for requirements management software?



"... requirements management isn't just something you do at the start of a project..."

WS: People in the industry are starting to understand that requirements management isn't just something you do at the start of a project and then ignore. They're realizing that it's a life cycle activity. We've all seen the analysts' charts about the cost of fixing a problem as you move through the project's life cycle, so that the further down the project you are, the greater the cost — that's an exponential increment. But if you take care of your requirements up front, the project scope is defined; you've got a much better chance of bringing the project in on time and to budget.

LD: What is the most important benefit of requirements management?

WS: At the beginning of a project you need to define the scope of the project and its requirements, and those requirements basically describe the things you have to do to satisfy your customer. Once you've defined a good set of requirements and they're agreed to by everyone, you should have a solid platform for drafting budget plans because you now have an agreed to budget scope.

It's also critical for good communication. In just about every project I've ever worked on, somebody wanted to make a change even before the scope had been defined. You need to communicate those changes to all the team members, along with what their effect is going to be. This is something that DOORS enables you to do. It helps you communicate back to the people who can collaborate on making the decision whether to implement the requested change. Everyone knows what the expected outcome is, whether it's a delay in the project or the requirement for more resources — nobody is surprised.

Best Practices

Requirements are essential to:

- Show the results users expect from the system.
- Show what the organization needs.
- Show what the system must do.
- Communicate the basics of the system to all participants.
- Provide the basis for the design of the system.
- Enable a logical approach to and provide a foundation for change management.
- Partition work out to contractors.
- Act as a foundation for testing.
- Act as a foundation for payment.
- Act as a foundation for the project plan.

LD: What new approach does PMConnex offer?

WS: Although software products for both requirements management and project management have been in use for many years, what's been missing is very tight integration between the two. In the past, requirements management and project management were considered separate disciplines, which meant you had one group of people managing the requirements and another group managing the project.

PMConnex is a new solution that allows people from both disciplines to have access to the same information. They now have the capability to assess what the impact of any change in the project will be — either from the requirements side or the project management side.

LD: How does PMConnex help prevent scope creep?

WS: In the current economic climate, project budgets are tight and many companies are restricting their spending to things that are mission critical. This places increas-

ing stress on project managers — they may have fewer resources, but might still need to make the same delivery commitment.

So managing scope becomes even more important. You can no longer build something and expect to keep amending it along the way. You've got to get it right the first time. This comes down to making sure that you've agreed to the scope up front, and that what you've agreed to deliver is absolutely what the customer wanted.

However, if a change is absolutely required, everyone involved has to have exactly the right information so that they can collaborate to make the right decisions and keep the project on track and ultimately successful.

LD: How does your partnership with Primavera strengthen Telelogic's strategic goals? Do you anticipate more joint products down the road?

WS: There's certainly the potential for more joint products. We've always had a very open approach to partnering with other vendors and solutions providers that we believe add real value for our customers. Both Telelogic and Primavera will benefit as a result of helping our joint customers to be more successful.

LD: Are you excited about the future for requirements management?

WS: Absolutely. I personally have focused on requirements management for more than 10 years. In the early days it was missionary selling, trying to convince people that this was a good discipline for them to adopt. Today requirements management is viewed as something that many companies, both big and small, must perform to ensure their future success.

When Telelogic started out in requirements management, we were focused on large, complex projects, like those from the DoD. But what we've seen evolve is that we have customers in just about every market segment, with projects of all sizes.

One of the goals of Telelogic is to eliminate the mundane in system and software development processes. If there's any opportunity to automate and streamline a cumbersome work process, we're there. ●

At a Glance

<p>Director of Field Products Marketing: William "Bill" Shaw</p> <p>Company: Telelogic</p> <p>Public: Headquarters Malmo, Sweden, with U.S. operations based in Irvine, Calif.</p> <p>Founded: 1983</p> <p>Global Reach: More than 1000 employees in 29 countries, including more than 170 employees in the U.S. and Canada.</p>	<p>Products: Telelogic DOORS, Telelogic Tau, Telelogic Synergy, Telelogic DocExpress.</p> <p>Markets: Telecommunications, military/aerospace, automotive, medical/healthcare, financial services, corporate IT, independent software development, consumer electronics and retail.</p>
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highways

and byways

By Louis Pilla

With the help of Primavera software, the New Jersey Department of Transportation is smoothing out the bumps in its road and bridge projects.

► Driving in New Jersey, with its 8.4 million inhabitants and more than six million registered vehicles, can rattle the nerves of even the most seasoned road warrior. With so many vehicles zooming around in the nation's fourth smallest state, New Jersey needs an up-to-date roadway and bridge system to keep traffic moving.

"We're bumper-to-bumper, wall-to-wall people on roads here," says Frank

Palise, manager in the quality assurance and improvements area at the New Jersey Department of Transportation (NJDOT), based in the state capital of Trenton, N.J. In the Garden State, "everything's crowded," he says.

To smooth construction projects, NJDOT's Capital Program Management Division, which manages NJDOT road and bridge construction, has begun to deploy Primavera Project

Planner for the Enterprise (P3e). With responsibility for over 10,000 miles of roadway (counting all road lanes), NJDOT will use P3e to plan and schedule its construction projects.

These projects can take from six months to three years to complete and cost anywhere from \$1 million to more than \$80 million. When fully implemented, P3e software will help NJDOT manage about 120 projects per year.

Design and construction

Overseeing roadway and bridge construction at NJDOT involves keeping tabs on two major categories of effort: project design and project construction. The P3e database will hold NJDOT's Capital Program Management Division schedule and budget for each project's design process. It also will contain the designers' and contractors' schedules for construction work. The timeframe for implementing P3e will occur in different stages for the design and construction processes, the goal being to incorporate all projects into the system within two years. (Work on implementing P3e

right-of-way and utility agreements.

The project construction phase involves two schedules: a designer's construction schedule and a contractor's schedule submitted for approval. The designer's construction schedule represents the designer's best guess during the design phase about the project timeline. The schedule establishes project milestones, which are used to assess bonuses and penalties. Similarly, the contractor's schedule represents the contractor's timeline for the job.

Prior to the implementation of P3e for the construction phase, which is scheduled to go live on April 1, designers submitted only

of-way impacts, contractors and designers will submit schedules using P3e, P3 or "approved equivalent software," according to NJDOT.

All of these schedules will be held in the P3e database. Using P3e to compare the designers' and contractors' schedules will allow for more accuracy in the design phase schedules, ultimately saving taxpayers' money.

The move to new software also presented the opportunity to standardize the format of the designers' and contractors' schedules, according to Emerson Misner, project engineer, who is in charge of construction

Using P3e to compare the designers' and contractors' schedules will allow for more accuracy in the design phase schedules.

for the design process began in September, 2001. Prior to that, NJDOT used Primavera Project Planner (P3) for the design process, and originally had no database for the construction process.)

In the design phase, most of the designs come from outside firms (NJDOT's internal designers handle just up to 15 percent of them). The design schedule outlines the activities involved in designing a project, including such items as acquiring

Gantt charts, except for a few larger projects. And contractors, depending on project size, submitted Gantt charts outlining their schedules.

But starting in April, with P3e, for projects costing less than \$5 million, contractors and designers will submit a CPM schedule using Primavera SureTrak Project Manager (or other software compatible with P3e). For projects over \$5 million, or those that meet other requirements, such as significant right-

scheduling and assessment.

Why the move?

In selecting P3e for its project management solution, NJDOT based its decision on such diverse factors as integration with current software and the ability to view construction projects by region.

On a practical level, because the Capital Program Management Division already had more than 20 licenses for P3, it made sense to

“move up to the next step with the same program,” Palise explains. “We felt that the learning curve would be minimal by doing that.” Ultimately, some 80 to 100 individuals should be using the software when fully rolled out.

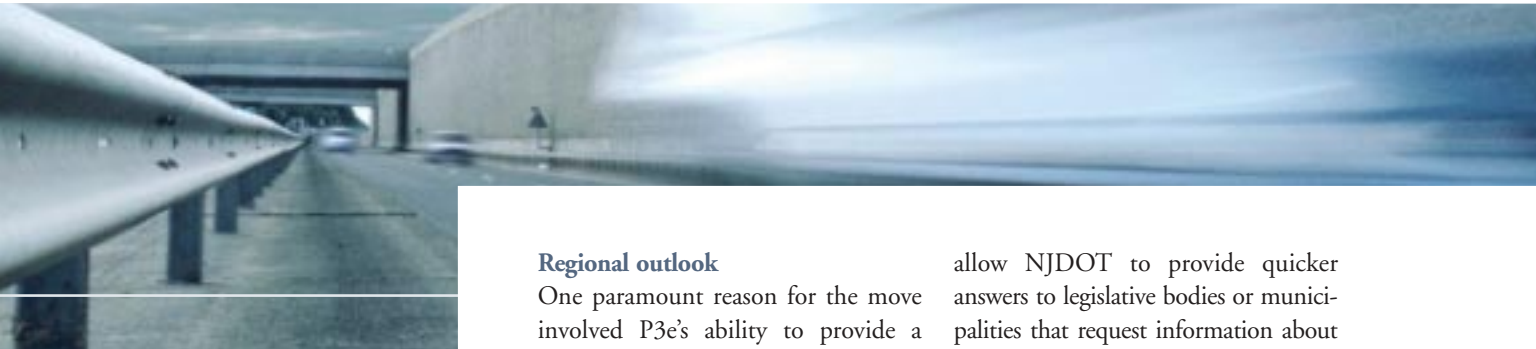
The platform also seemed ideal to marry with existing systems and at the same time help improve those systems, says Palise. For instance, P3e integrates with NJDOT internal software called Project Reporting System (PRS), which many people use to track the progress of jobs.

Much of the impetus for moving to P3e came indirectly from the

NJDOT Transportation Capital Program

Fiscal Year 2002 (July 1, 2001 to June 30, 2002)

Item	Budget
Construction and related activities	\$964 million
Local assistance (funds for municipalities)	\$395 million
Planning, engineering, purchasing right of way	\$261 million



federal government. About two-and-a-half years ago, the U.S. Department of Transportation’s Federal Highway Administration (FHWA), which provides federal funding for transportation projects, audited various NJDOT construction projects. The federal government provides most of the funds for New Jersey’s highway system, Palise says, so NJDOT has to work closely with FHWA to ensure that federal funds are spent correctly.

Regional outlook

One paramount reason for the move involved P3e’s ability to provide a regional view of construction projects. When fully implemented, P3e will allow anyone using the software to determine if construction activities will overlap and affect each other.

This information will be key as managers and designers establish schedules, so that multiple jobs aren’t scheduled in one location, helping to eliminate traffic snags caused by more than one project occurring in the same area.

Having all the data stored in P3e means that information about such projects, whether in the design or construction stage, will be readily available. Immediate access to projects also will

allow NJDOT to provide quicker answers to legislative bodies or municipalities that request information about construction efforts. The system will avoid the traditional process of contacting many different parties to get that information together.

More timely

Though in use only since September 2001, users on the design side are noticing clear benefits from P3e. For instance, before P3e, workers had to rekey data in order to update the design project. That meant that project managers typically had to wait several weeks for an update to their projects.

Today, the database gets a daily electronic update. This “allows managers to

know how things stand on a project in real time,” says Palise.

This also frees up time for the workers who re-keyed that information, and who now can be used elsewhere. With billion-dollar shortfalls looming in New Jersey’s state budget, that’s no small benefit.

“This is going to allow us to take our existing resources and still be able to do the job,” says Palise.

Making improvements

As is common with any comprehensive software implementation, bringing P3e up to speed required a little fine-tuning. As NJDOT worked with the software, it called on Primavera to address compatibility issues between P3 and P3e. It also asked the company to tailor the software more specifically for the transportation industry.

“Of course, they were more than

happy to work with us to correct what we felt were shortcomings that wouldn’t allow us to maximize the advantages of P3e,” says Palise. As a consequence, NJDOT ended up with a product that was even more effective than originally thought. “We’re both gainers out of that,” he says.

Road to the future

Though it’s too early to quantify any specific outcomes from using P3e, Palise sees the prospect for expanded use of the software. This could involve using P3e to coordinate projects from municipalities, for example (See *Sideroads*).

In the future, the system also might allow NJDOT to better coordinate its construction projects with utility companies, adds Misner.

Smoother ride

Although NJDOT can’t guarantee a smooth ride for every vehicle on New Jersey’s roadways, drivers might travel more easily knowing that construction projects are planned to minimize disruptions.

Behind the scenes, P3e is helping to pave that clearer path. •

Louis Pilla is a freelance writer based in Horsham, Pa. Contact him at pilla@netreach.net.

Currently, the NJDOT database doesn’t track every roadway project that occurs in the state, such as those handled by municipalities and counties. Ideally, a statewide system would hold all roadway and bridge projects, allowing further project coordination, according to Frank Palise, manager in the quality assurance and improvements area at NJDOT. P3e someday may become the platform of choice for that all-encompassing database.

What’s more, the software could have far-reaching effects through the New Jersey Quality Initiative (NJQI) Interagency Network. The group, which involves both government and private stakeholders involved in state transportation, shares information and adopts universal specifications for projects. “If we are successful with this, I envision that the NJQI may elect to try and spread [P3e] out among all the members of the NJQI,” says Palise.

— LP

Sideroads

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E-Learning: Staying Competitive Without Leaving Home

By Oliver Rist

► E-learning is rapidly becoming a catalyst for the (hopeful) dot.com revival. Not only is it an efficient way to sharpen employee work skills, it's also far more cost-effective than traditional seminar or certificate training classes. And you don't even have to leave home.

A recent study by IDC estimates that the e-learning market in the United States will grow from \$2.3 billion last year to \$14.7 billion by 2004, extended to \$23 billion worldwide.



But even with these impressive numbers, some managers and employees wonder if e-learning is ready for serious consideration. In the past, bad experiences usually stemmed not only from truncated content, but a delivery interface that was inferior to traditional methods.

Now interactive

So what's changed? Plenty, especially at the interface level. E-learning software interfaces from companies like Interwise (www.interwise.com), for example, take advantage of the maturity of Web-based collaboration software. These new programs run entirely within a Web browser, and have the ability to share not only images, but actual desktop applications – live! And not merely from the instructor's machine, but interactively among any class participants. Live audio streaming is quite a leap from the days when online learning meant replayed recorded lectures. And instant messaging hooks and electronic white boarding means teachers can answer questions on- or off-line, as well as modify existing class

material immediately in response to student questions.

E-learning is simply the quickest, most convenient and by far the cheapest way to keep workers current on new technologies, methodologies and job techniques; and the outlets for such opportunities are growing every day. Project managers, for instance, can choose between an e-learning curriculum offered directly from the Project Management Institute (PMI) (www.pmi.org), or from a number of third-party curricula that work in conjunction with PMI, like the International Institute for Learning (www.iil.com).

This helps employees not only stay sharp in their

A recent study by IDC estimates that the e-learning market in the U.S. will grow from \$2.3 billion last year to \$14.7 billion by 2004.

chosen fields, but also helps business managers further leverage investments in tools and technologies that they've already made.

Primavera Enterprise and Primavera TeamPlay are excellent examples. Sophisticated project management tools by anyone's standard, they have significant feature depth that many users might never fully exploit because they don't have the time or budget to travel to courses sponsored by the company or its network of authorized trainers.

Primavera has responded by offering a series of cost-effective and convenient Web-based courses in addition to its traditional classroom education programs. That means managers can expect to see not only hard dollar benefits from instituting e-learning initiatives, but also substantial soft dollar savings as well.

Staying competitive is important, especially in a soft economy. And e-learning is one of the best ways I know to stay sharp without going broke. •

Oliver Rist is a Westfield, N.J.-based technology journalist. He is a regular contributor to Internet Week, Network Computing and Software Development Times.

‘Simple’ Earned Value

By *Quentin W. Fleming*



► In 1967, the Department of Defense issued 35 precise earned value management criteria. Then, in 1996, in an effort to reconcile government and industry management practices, the DoD accepted industry’s 32 Earned Value Management System (EVMS) guidelines.

Although these criteria have stood the test of time for complex projects, they may also have smothered some smaller ones. But by stripping away some of the “bells and whistles,” we are left with 10 basic criteria that create a simple, but solid, form of earned value for *all* projects – earned value for the masses.

Here are my Top Ten:

No. 1 – *Define authorized work elements for the program. A Work Breakdown Structure (WBS), tailored for effective internal management control, commonly is used in this process.*

The scope of work for the project must be defined in order to measure performance. Project managers must define their objectives, deliverables and key milestones. The WBS provides a hierarchical family tree that groups major project segments and specifies deliverables: for example, hardware, software, services and intellectual data. It integrates scope with budget and schedule by creating management control points called Control Account Plans, CAPs. Any work not identified within the WBS is potentially out of scope and requires authorization.

No. 2 – *Identify the program organizational structure, including the major subcontractors responsible for accomplishing the authorized work, and define the organizational elements in which work will be planned and controlled.*

This extends the scope definition process and requires determination of who will perform the work. All tasks contained in the project’s WBS must be assigned to a specific company. If the company is not capable of performing the work, it must be outsourced. Make/buy determinations are a part of the scope definition process.

No. 3 – *Provide for integration of the company’s planning, scheduling, budgeting, work authorization and cost accumulation processes and, as appropriate, the program WBS and organizational structure.*

The project management processes should be integrated with both the work definition by WBS and the functional organizations performing the effort. This requirement specifies that projects employ a management control system using a common information database that transcends the company’s functional organizations. The project’s CAPs provide the basis for this integration.

No. 6 – *Schedule the authorized work in a manner that describes the sequence of work and identifies the significant task interdependencies required to meet the requirements of the program.*

Earned value requires formal scheduling, period. A good scheduling system will tell which tasks are impeding others and isolates the project’s longest or critical path. A master schedule will set forth all critical milestones and key tasks. The project’s “planned value” will be determined by compliance with this criterion.

No. 7 – *Identify physical products, milestones, technical*

performance goals or other indicators used to measure progress.

All projects must be able to measure physical performance, as defined by authorized tasks. This requires defined metrics to convert the “planned values” into “earned values.” Projects must specify what physical products, deliverables, outputs, metrics, and technical performance indicators will be used to measure work accomplished against the planned schedules.

No. 8 – Establish and maintain a time-phased budget baseline at the control account level against which program performance can be measured. Initial budgets established for performance measurement will be based on either internal management goals or the external customer-negotiated target cost, including estimates for authorized (but incomplete) work. Budget for long-term efforts may be held in higher level accounts until an appropriate time for allocation at the control account level.

A time-phased project baseline is required to meas-

“But by stripping away some of the ‘bells and whistles,’ we are left with 10 basic criteria that create a simple, but solid, form of earned value for all projects.”

ure performance formed from the summation of the CAPs. The baseline must include all authorized work, including work that is authorized but not yet negotiated. On long-duration projects, it may be impossible to budget effort to the specific work package level. In such cases, long-term budgets may be kept at the higher level WBS elements called “planning packages.” However, long-term budgets must be tightly controlled to prevent the co-mingling of such effort with near-term, fully defined work packages.

No. 16 – Record direct costs consistently with the budgets in a formal system controlled by the general account books.

Project managers must know how much money they have spent on their projects. This criterion requires

accounting for all incurred costs by project. The preferred technique is “applied direct cost,” which simply means direct resources are tracked as they are consumed.

No. 22 – At least monthly, generate the following information at the control account and other levels as necessary for management control using actual cost data from, or reconcilable with, the accounting system: The amount of planned budget vs. budget earned for work accomplished. This comparison provides the schedule variance. The amount of the budget earned vs. the actual (applied where appropriate) direct costs for the same work. This comparison provides the cost variance.

This differentiates earned value management from other traditional approaches of measuring cost performance as planned costs vs. actual costs. While this requires only a monthly analysis, there is an industry trend toward weekly measurement of direct labor hours. Comparisons should be sufficiently detailed to allow for performance measurement by category of direct costs, subcontractor performance and organization.

No. 27 – Develop revised cost estimates at completion based on performance to date, commitment values for material and estimates of future conditions.

A key issue facing all projects is their Estimate At Completion (EAC). If it will cost more than the authorized budget, management should know as early as possible. EACs must be performed routinely based on actual performance and a reasonable determination of the work ahead. These forecasts must relate to the authorized statement of work and are best supported by bottom-up estimates for all remaining tasks.

No. 28 – Incorporate authorized changes in a timely manner, recording the effects in budgets and schedules. Base changes on the amount estimated and budgeted to the program organizations.

This last criterion requires all changes to be addressed, either approved or rejected. All approved changes must be incorporated into the project baseline in a timely manner. •

Quentin Fleming is the author of seven books, including Earned Value Project Management, which he co-wrote with Primavera CEO Joel Koppelman. Contact him at www.QuentinF.com.

PGA's Triplett Dedicated to Golf for Everyone

By Robert Thompson

➤ As a star on golf's PGA Tour, 39-year-old Kirk Triplett is used to playing golf courses constructed by the likes of Jack Nicklaus or Arnold Palmer — and costing upwards of \$20 million to build.

That translates into \$150 rounds for the average duffer.

But, asks Triplett, “How do you bring new golfers into the game when it costs \$100 or \$150 per round?”

It's a question that concerned him so much that he called on friends Ron and Chris Graham (Ron Graham is a Tenn.-based businessman) and architect Stuart Moore to create a new and aptly named company, Golf For Everyone.

The group's first course, in Murfreesboro, Tenn., will open nine holes this summer. Nine will follow by the end of the year.

Triplett provided some help to Moore in making the course playable for good golfers, as well as beginners. But, the biggest bonus is the price. While it cost nearly \$3 million to build — a very small amount by contemporary standards — it will only cost between \$20 and \$25 to play.

“What I bring to this is my credibility as a PGA Tour player,” said Triplett. “And right from the first hole, I was looking to see what I could do to make the course better for the more competitive player, while still making it playable for

a newcomer.”

New players are very important to both Triplett and the project, he says. One of the aims of Golf For Everyone is to build beginner courses that may consist of just six holes — two short par-4s and four par-3s — that a junior player could

round during a Wednesday Pro-Am, the day before the start of last year's Southern Farm Bureau Classic in Jackson, Miss. He was affable, interesting and interested, and a pretty terrific guy.

One of my fellow writers exclaimed that Triplett was even



“How do you bring new golfers into the game when it costs \$100 or \$150 per round?”

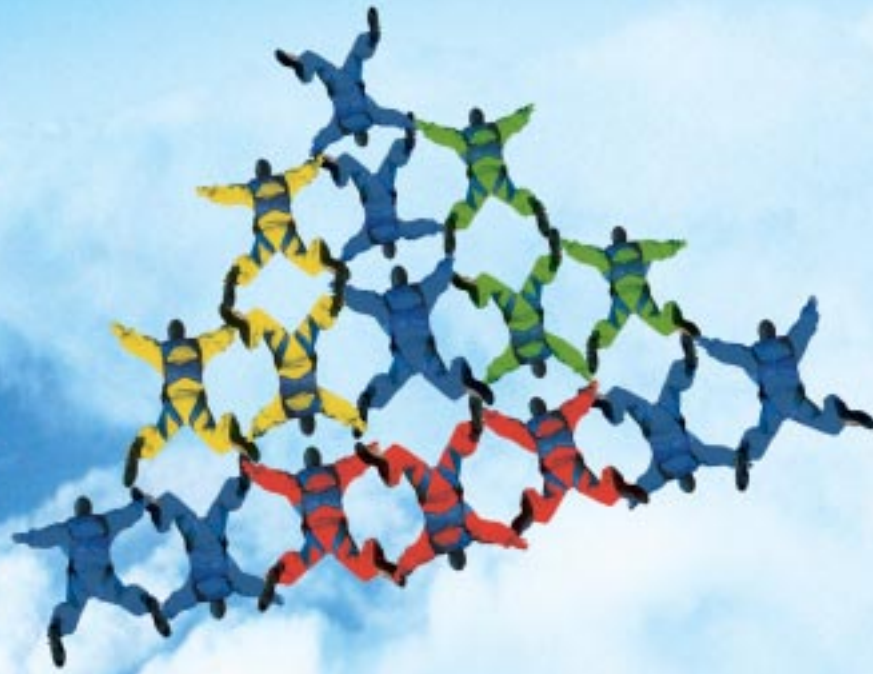
tackle while a parent plays the full course. That way new players can learn the game without being overwhelmed by the difficulty, and the cost, of playing a full-length course.

The Golf For Everyone project is lucky to have Triplett behind it. He's a true gentleman in a sport that has more than its share of spoiled millionaires. Triplett joined me and a few other jaded journalists for a

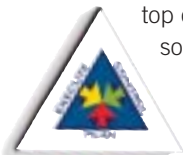
more fun than he'd hoped — “He re-establishes my faith in professional athletes,” my friend said.

Amen to that. And, let's hope there are more Kirk Triplett's out there. •

Robert Thompson writes about golf for PGA.com, the official Website of the PGA golf tour. He lives in Toronto.



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