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lean-Instructional Systems Design via the PACTSM Processes for T&D

THE CADDI NEWSLETTER

Winter 1999-2000 Volume III, Issue 1

The AoP Framework for Management

By Guy W. Wallace

Performance-based T&D requires defining the performance that produces worthy outcomes. The PACT Processes offer a way to consistently map performance at any level in the organization. Learn the basics in this article by CADDI partner Guy Wallace.

The PACT
Processes
include

CAD Curriculum
Architecture
Design
*Systems Engineering
of T&D Product Line*

MCD Modular
Curriculum
Development
*New T&D Product
Development*

IAD Instructional
Activity
Development
*Development of
Instructional Activities*

If there's one thing the quality movement has drummed into our collective minds, it is that "everything is a process." And so it is, from the simplest of activities to the most complex, almost everything that produces an output of some kind can be mapped, diagrammed, dissected, analyzed, improved, and put back together.

And in the Humpty Dumpty world of breaking things apart and putting them together again, there are nearly as many models for studying processes as there were pieces of Humpty Dumpty. We at CADDI didn't want to be left out of this very lucrative field of developing process models, so we created one of our own.

Seriously, we don't provide consulting services on process improvement—it's not our line of business—but we do feel it's important to understand

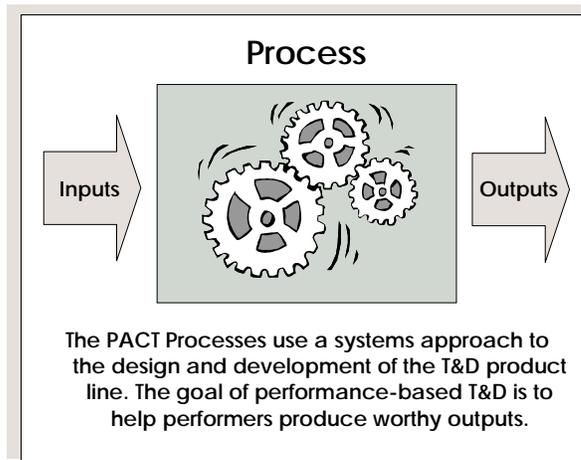
how our model for Performance Modeling and establishing Areas of Performance (AoP) links to this important field. You'll find it described in the special insert to this newsletter.

In this article, we'll talk about how systems and process thinking applies to the PACT Process for Performance Modeling.

Thinking Systemwide

First, we like to think in terms of "systems," which are collections of related processes. This bias toward "systems thinking" is the linchpin of process improve-

ment, because without it, the fix for one process may inadvertently disable or break another. It's akin to building a better mousetrap at the expense of the family cat's food chain.



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- ▶ Shortening design and development times with MCD-*lite*. It's perfect for some projects and it's less filling! Page 6.
- ▶ Now *that's* a good idea. A CADDI client leaves a voice mail message. Page 6.



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PACT Processes Help Transfer Technology

By Dottie A. Soelke and Guy W. Wallace

If you have ever been challenged with contracting for and/or designing and developing courseware for technology transfers, you know it's way up there on the degree of difficulty scale. It is an almost impossible task to find designers/developers and instructors who know enough about the new technology to be effective quickly. The truth is, *ignorance* of the subject matter is not a stumbling block when coupled with the use of CADDI's PACT Process for Modular Curriculum DevelopmentSM (MCD).

In 1994, one of our clients acquired an organization that had developed an innovative approach to combinatorial chemistry, a technology that accelerates the discovery of new drug compounds. The technology is so unconventional and the potential for discovery of new drug compounds is so great that other pharmaceutical companies wanted to buy and transfer the process and technology to their employees.

Unfortunately, no training existed on this proprietary combinatorial chemistry process. Our client

needed to demonstrate to potential buyers that training would indeed transfer the technology effectively.

The urgency of our client's need combined with a highly skilled target audience (Ph.D.s) was a perfect match for the accelerated training development cycle that MCD offers.

The more traditional approach to course design usually involves repeated interview cycles with subject matter experts (SMEs), practitioners, and business stakeholders (many of whom may have different views on technical content and approach). The MCD methodology uses an immersion technique that typically involves an intense team meeting in the Analysis Phase and another in the Design Phase. Because this project called for such quick turnaround, we abbreviated our normal process and met for just two days in both instances. During both meetings, we isolated a group of 13 innovators/subject matter experts, practitioners, and business stakeholders to analyze the work and create a high-level design. The process itself is thorough and flexible enough to accommodate the

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CADDI Offices to Close for Holidays

By Deb Smits

We'll be closing our offices for a team vacation beginning Friday, December 17, 1999 and reopening them on Tuesday, January 4, 2000 at 8:00 a.m., Central Standard Time. We close our offices during this time to better coordinate the vacation schedules of our small staff and to minimize disruptions to our project work.

If you do need to contact us during this time, you may leave a message for one of the partners or our business manager on our voice mail system. Calls will be returned as soon as possible.

If you need immediate assistance on project work, please contact one of the partners by cellular phone.

Guy Wallace at (630) 240-6055
Pete Hybert at (630) 240-6051
Kelly Rennels Smith at (630) 240-6053

For immediate assistance with administrative concerns, please contact our business manager on her cellular phone.

Deb Smits at (630) 240-6052

To reach a direct extension, call (630) 355-9800 and then the extension number.

Guy Wallace, Ext. 22; Pete Hybert, Ext. 21;
Kelly Rennels Smith, Ext. 19;
Dottie Soelke, Ext. 18; Jeff Carpenter, Ext. 20;
Deb Smits, Ext. 23

Thank you and happy holidays!

"LEARNING BY DESIGN" VERSUS "LEARNING BY CHANCE"

Cost/Benefits Measurement and Process Improvement Systems

By Guy W. Wallace

In past issues of *lean-ISD*, we've talked about the first three systems shown on our *Learning by Design* clockface model: Governance and Advisory, Strategic Planning, and Operations Planning and Management. These three positions and the two we'll cover in this issue (Cost/Benefits Measurement and Process Improvement Systems) are systems with processes that provide leadership and direction to the T&D function.

Collectively, these five systems establish broad plans and objectives based on advice provided by a formal governance structure, turn those into strategies and operational tactics, measure costs and benefits, and initiate process improvements as needed.

At an enterprise level, companies (large and small) have some means of measuring costs and improving processes. T&D functions perform these activities also, but the degree of formality with which they do it varies substantially.



Leadership and direction come from positions twelve through four on the clockface model.

3 Cost/Benefits Measurement System

This system organizes the measuring and report-

(Continued on page 10)



JOIN US AT THE ANNUAL CONFERENCE

CADDI at ISPI 2000: Cincinnati, Ohio

CADDI partners and consultants are looking forward to a series of presentations, workshops, and discussions they'll participate in at the April ISPI conference. Join us at one of the presentations or visit us at our expo booth (#102/104).

Just Do It—Performance-based Qualification
with Pete Hybert and Kelly Rennels Smith and Dennis Smith and Mark King (Siemens).
Wednesday, April 12 @ 4:00 to 5:30 p.m.

Qualifying Your Sales Force
with Kelly Rennels Smith
Friday, April 14 @ 10:00 to 11:30 a.m.

Performance Modeling and Knowledge/Skill Analysis Workshop (Preconference workshop)
with Kelly Rennels Smith
Tuesday, April 11 @ 8:30 a.m. to 5:30 p.m.

99 Seconds: Performance Modeling
with Guy Wallace
Tuesday, April 11 @ 5:00 p.m. to 6:30 p.m.

Cracker-barrel: Performance Modeling
with Guy Wallace
Wednesday, April 12 @ 6:00 p.m. to 7:30 p.m.

Implementing a lean-ISD Methodology at General Motors University
with Guy Wallace, Shelly Matewicz (GM), Cathy Martin, and Ric Byham
Wednesday, April 12 @ 4:00 to 5:30 p.m.

Training and Development Systems View
with Guy Wallace
Thursday, April 13 @ 11:00 a.m. to 12:30 p.m.

How to Select, Design, and Sell Scoping and Integrated Performance Solutions
with Dottie Soelke and former colleague Ray Svenson
Friday, April 14 @ 1:00 p.m. to 2:30 p.m.

For more information about ISPI or the conference, call ISPI at (202) 408-7969 or visit their Web site at www.ISPI.org ▶▶▶▶



Update on CADDI Projects

Siemens Building Technologies, Inc.—Landis Division

Kelly is managing an MCD effort to develop five week-long, instructor-led classes for the Sales Engineer CAD that was completed last year. The courses under development will teach a Sales Engineer how to estimate and sell several of Siemens' key products and services.

- ▶ Performance Solutions Sales Strategies
- ▶ ABCs of Selling APOGEE Fire Alarm and Life Safety Solutions
- ▶ ABCs of Selling Cerberus Fire Alarm and Life Safety Solutions
- ▶ ABCs of Selling APOGEE Security Solutions
- ▶ Estimating

The Analysis/Design Phases for all five sub-projects have been completed, and they are currently in the Development Phase. The pilot deliveries have all been scheduled between February 28 and April 10 of next year. Kelly is working with a team of developers including Jeff Carpenter, Stephen Muller, and Sandy Bachman to accomplish this mammoth task!

Other upcoming Siemens work includes a project to produce a CAD for sales managers. Project kickoff is scheduled for January.

We are also supporting the rollout of a new control system. Pete has waded into Phases 2/3 by completing a draft Performance Model, Knowledge/Skill Matrix, and Module Inventory Framework from existing documentation and interviews. The next steps are a series of "walk-throughs" to identify new/changed tasks, knowledge, and skills and to begin designing modules and lessons. It can become complicated to deconstruct the PACT Process steps and work on things iteratively to match the product development process—we will have some lessons designed and even in development before the analysis is finished on others. But, we haven't heard of a client yet that was even remotely interested in changing their product development plans to make things easier for the training function!

General Motors University

The group-paced T&D templates Dottie has been developing are in the pilot stage. We're also working on templates for self-paced and structured, on-the-job training materials. Dottie and Cathy Martin are working on the MI toolkit updates. They are joined by Guy and Ric Byham as they work on CAD/MCD certification instruments updates.

(Continued on page 5)

CADDI clients are applying PACT Processes in a wide range of business settings.

WIN VALUABLE PRIZES WHEN YOU...



Tell Us What You've Learned

We are always extremely interested (and we hope our readers are, as well) in the applications and lessons learned from the PACT practitioners we have trained and from their apprentices. If you are a PACT practitioner and would like to share your experiences, we are willing to be the conduit through our *lean-ISD* newsletter and/or our Web site to other practitioners.

Perhaps you've discovered a unique way to use the PACT Process tools and techniques, or maybe you've customized a PACT Process for a non-training use in your company. Or perhaps you've learned some other important lessons in planning, managing, or conducting one of your projects.

Send your submissions to our offices at CADDI-INC@worldnet.att.net or by snail mail to 175 Jackson Avenue, Suite 215, Naperville, IL 60540. Your article can vary in length and should be approved by your company (if necessary). We will send you a release form when we receive your submission. Please be sure to include enough background so that our readers can understand your business and requirements. We reserve the right to edit for reasons of space or clarity.

If we publish your words of wisdom in our newsletter, we'll send you a special gift from the CADDI treasure chest. ▶▶▶▶



Update on CADDI Projects *(continued)*

(Continued from page 4)

The Brand MCD is underway. We conducted our first Project Steering Team meeting and the first of five Analysis/Design Team meetings in November. We brought in Mark Bade of Bade and Associates to work as an ISD developer and to manage other developers when we begin preparing materials.

Pete and Jeff are working on an update to a CAD/MC Analysis Workshop for delivery next year. Dottie, Guy, Cathy Martin, and Ric Byham will be working on an update to both the CAD/MC Design and MCD/MI Design workshops.

Last quarter Pete had the opportunity to observe and certify three PACT practitioners at GMU in the PACT Analysis methodology. Congratulations to the practitioners, not only for getting the job done but doing it with someone in the back of the room making notes about everything they did and said (and thanks for being good sports about it!). Pete enjoyed seeing how people were able to “trust the process” and arrive at good output even though using very different styles of facilitating and interacting with the group.

Note: At General Motors, CAD is known as Modular Curriculum (MC) and MCD is known as Modular Instruction (MI).

Motorola

Pete is just completing a study for the marketing organization within Motorola University using a variation of the existing training assessment portion of the CAD process. We're happy to welcome Motorola to our client list. ▶▶▶▶



CADDI PARTNERS WITH E-BUSINESS SOLUTIONS PROVIDER

Phase I of Online PACToolSM to Launch in 2000

In an effort to add value to our clients while capitalizing on the latest Internet technology, we are developing a network-based PACTool with the help of InterKinetic, Inc. (www.interkinetic.com), an e-business solutions provider in Chicago.

Version 1.0 of the PACTool consists of a browser-based analysis toolkit accessible from anywhere in the world. Development on this phase of the project is nearly complete.

One of InterKinetic's goals has been to leverage new technology—to make input, modification, and report generation faster and easier—while not compromising the PACT Processes. “This is only the beginning of the benefits CADDI and their

clients will see from an Internet version of the PACTool,” said InterKinetic CEO Gary Schafer.

The PACTool is being developed on Sun's Java platform communicating with an Oracle 8i database. It is being hosted on Sun's Ultra 5 servers, thus positioning the PACTool as a true enterprise application.

To be one of the first to use the PACTool Internet version when it launches after the first of the year, inquire about our beta test program by contacting Kelly Smith at kelly.smith@caddi.com.



ONE SIZE DOESN'T FIT ALL

Shortening Cycle Times with MCD-liteSM

By Guy W. Wallace and Peter R. Hybert

Knowing when and how to adapt any common process can be very tricky—and very necessary, at times. Truly, one size does not fit all. And so it is with Modular Curriculum Development (MCD) projects: each has unique requirements and players, so some adaptation in certain situations is not only needed, it's required. That's what we'll talk about in this article: how to use an abbreviated version of our MCD Process called MCD-lite

But before we get into adapting processes, it's important to state that at CADDI we believe in and practice the use of common processes for T&D. The PACT Processes are performance-based, accelerated, and customer-/stakeholder-driven. Although they can be used separately to design a curriculum or to design and develop training events or instructional activities, together, they are a systems engineering approach to T&D.

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A PACT PRACTITIONER LEAVES US A VOICE MAIL

Now, That's a Clever Idea!



Our client Brian Blecke often writes or calls our offices after he finishes a meeting. Brian has been a PACT Practitioner for several years and recently moved with his family to Chicago where he works for a financial institution. Unable to reach Guy in person, Brian opted to leave the following voice mail. His last "project update" appeared in the winter 1998 newsletter.

“

Hey Guy! It is Friday afternoon and I wanted to let you know I just finished up the analysis gate review for this rather enormous CAD curriculum. It was one of those meetings

that was supposed to last six hours. (They were hardly willing to give me four hours, right?). We started at 8:00 this morning, and I just now walked out of there at 6:10 p.m.

As we reviewed the data, we not only covered what I needed to cover, but they began to redesign our performance appraisals, the performance management system, and the hiring and selection process. It was one of those meetings you get done with, sit down, catch your breath and say, "Wow!" It was just something else.

The Steering Team challenged the data in some places, which was necessary. But I had an Analysis Team member in there. He sat there and said, "This is really interesting." He answered every one of their

challenges, and they just could not overcome the data.

We had one person drop out of the Design Team. I thought he was going to be critical because we have regions in the company, and each region does its work just a little bit differently. That's why I wanted to have each region represented on the Design Team. Unfortunately, real work intervened, forcing him to drop out.

Because the regional input was so critical, I suggested that we might need a design review team or two. I explained what that was and why it was important. The Steering Team latched on to the idea and said, "You need to do those sorts of design reviews with the other lines of business that we interact with."

The Steering Team was looking for a way to improve the interaction points. We'd come to the table, data in hand, and propose how we think our lines of business are supposed to interact. They would influence the way we are actually working, not to change the curriculum necessarily, but to really deal with performance. The Steering Team thought it would be a clever idea, and I said "you're right, that is a clever idea."

This next topic knocked me out of my shoes. The Steering Team said, "We think we should talk to a select few customers in each region and ask them, 'If we perform in this way with these measures, would this be good enough to do business with you or other people?'" And I said, "Hey, *that* is a clever idea isn't it?"

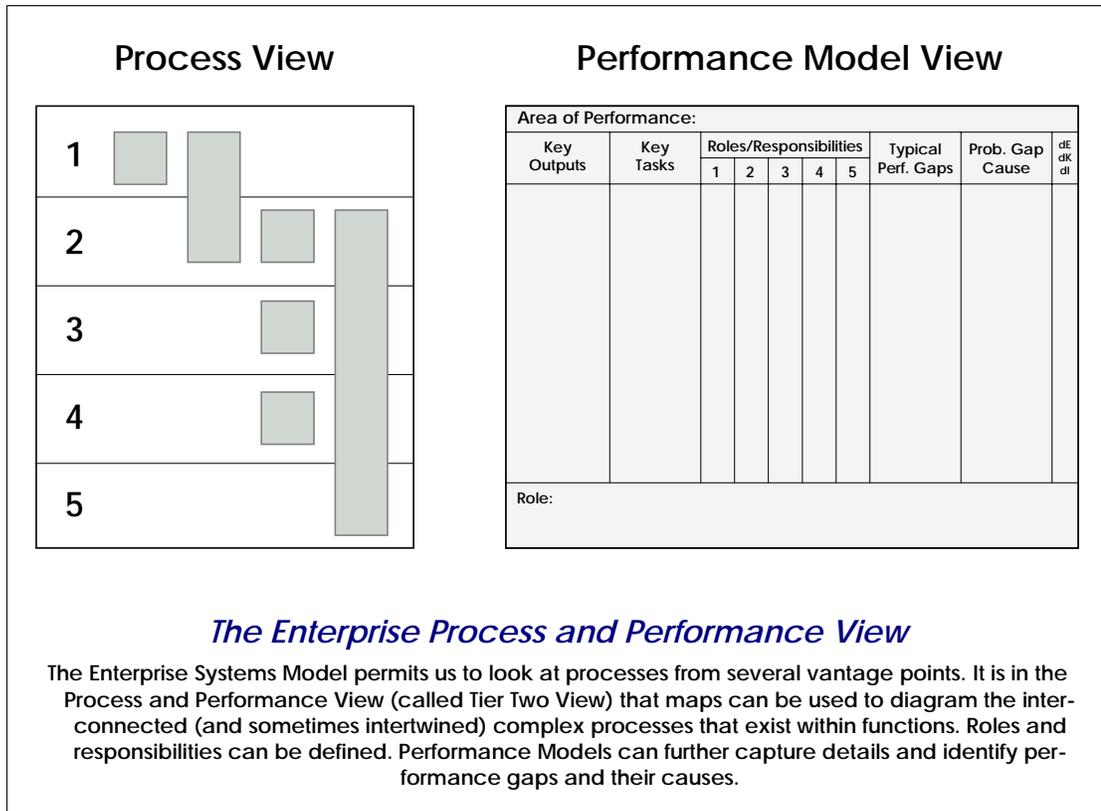
The whole meeting blew me away. It was great! I thought you'd like to know how well "the process" worked! ▶▶▶▶

”

"It was one of those meetings that was supposed to last six hours." But ten hours later...

The AoP Framework for Management (continued)

(Continued from page 1)



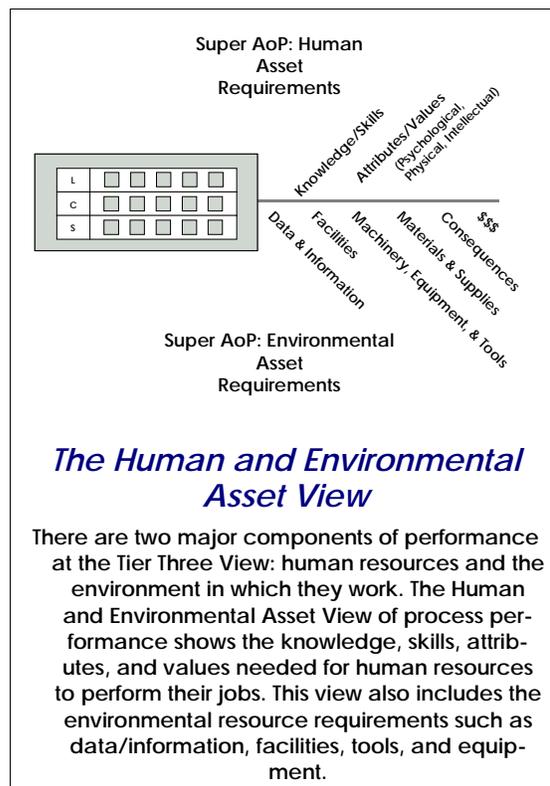
Consistency is important if the AoP framework is to be useable at all levels of the organization.

The PACT Processes use a systems approach to the design and development of the T&D product line. They are a means to an end—and that “means” is to study performance and to develop performance-based T&D through structured, gated processes that produce consistent results over time and at any level in the organization. And the “end” is to improve business process performance and return value to shareholders.

We’ve found that if human performance is studied using common terminology and frameworks, the ability to share T&D among departments, functions, and throughout the entire enterprise is greatly enhanced and that produces better performance at reduced costs. In much the same way that the automobile industry standardizes many parts among different vehicles, why shouldn’t T&D professionals apply the same systems engineering thinking approach to its own product line?

Whether a system is mapped at the high-level enterprise view or dissected at the functional or

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The AoP Framework for Management (continued)

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group level, systems are composed of three kinds of processes.

- ▶ **Leadership** processes that plan and manage strategies and provide direction and operational management to the process
- ▶ **Core** processes that define the outputs (the specific product line or services) of the enterprise or function
- ▶ **Support** processes that enable the leadership and core processes to take place

Super Areas of Management Performance

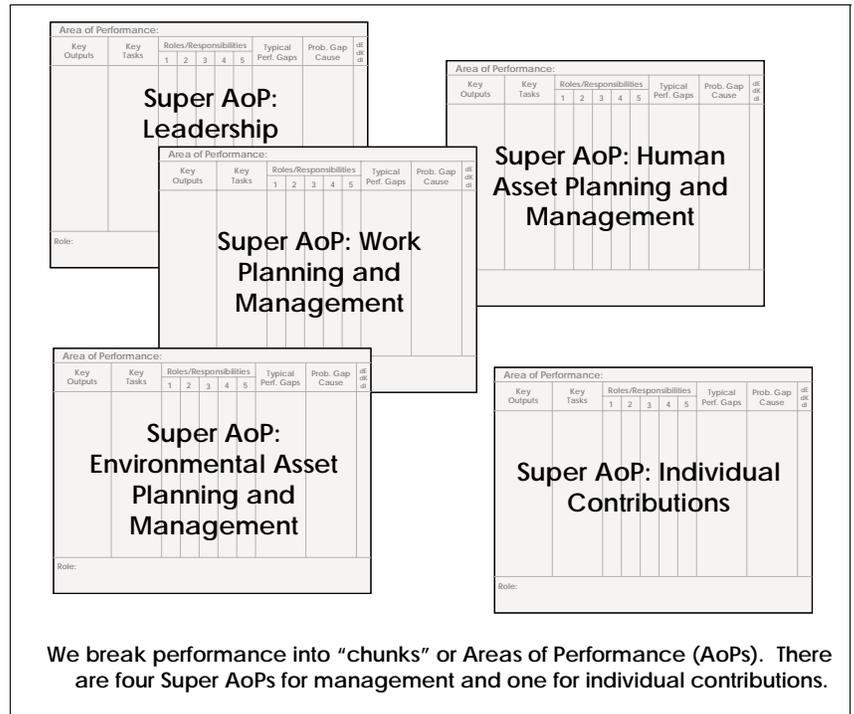
Our experience in looking at management job performance over the years suggests that performance can be analyzed within a framework of logical “chunks” or groupings. We call them Areas of Performance (AoPs), which can be clustered into Super Areas of Performance. These super chunks change very little from company to company.

“Wait!” you say. “You mean that I’d see the same AoPs at mom’s grocery store and tackle shop as I’d see at monolith technology, incorporated?”

The answer is “yes” with only a slight qualification. That slight qualification is this: although they may be named differently at different companies, management work can be sorted into the following four generic Super Areas of Management Performance:

- ▶ Leadership
- ▶ Work Planning and Management
- ▶ Human Asset Planning and Management
- ▶ Environmental Asset Planning and Management

This framework is a starting point for analyzing managerial performance. Although clients may wordsmith the AoPs to reflect their local language and specific performance outputs and tasks, using a common set of terms throughout the organization permits common and shareable needs of



management training and development to be identified more easily.

What's Common, What's Not

The goal isn't to force shareability of T&D where it's not warranted. The goal is to find where various target audiences perform the same or very similar tasks and therefore have similar needs for T&D, and also to find where the needs are truly different and unique. That way, not only can you customize or share a greater percentage of T&D systems and instruments, but also selection systems and instruments and performance appraisal systems and instruments. These can be appropriately the same—or different—depending on the realities of the target audiences.

The outputs and tasks for the Super AoPs of Leadership, Human Asset Planning and Management, and Environmental Asset Planning and Management are usually common across an organization (or *could be common*). The enabling knowledge and skills for them are also mostly common and shareable. Thus, T&D for these AoPs is usually mostly shareable. If Performance Models for these AoPs have been previously de-

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Cathy Martin of General Motors added the word “super” to the term AoP as a way of distinguishing them from smaller chunks of performance.

The AoP Framework for Management (continued)

(Continued from page 8)

veloped, the models are usually reuseable when new target audiences are analyzed.

On the other hand, the Super AoP of Work Planning and Management is usually unique to each organization. Managing a sales operation is quite different from managing a manufacturing organization, for example. Doling out work is different, and follow-up requires a different approach. Thus, T&D would be appropriately different for these audiences.

Costly T&D

We all know that designing, developing, and deploying T&D is expensive. And the most costly T&D from a shareholder perspective is where it

- ▶ Doesn't improve performance

- ▶ Gets redundantly designed, developed, and deployed for varied target audiences that are believed to be different when they're not
- ▶ Requires costly, frequent updating to keep the content *evergreen*

Unluckily, these costs are not easy to see on the surface, and though the PACT Processes are designed to minimize this significantly, we *don't* and *won't* claim to solve the problem completely. But the Super AoP framework is intended to set the analysis efforts out on the right foot to avoid these unnecessary downstream costs and to build a modular curriculum that takes a systems engineering approach to ISD and to reduce overall life-cycle costs! ▶▶▶▶

NOTE: The insert to this newsletter shows how the AoP framework fits within our Enterprise Systems View of business processes.

A systems approach is as important to T&D as it is to large-scale manufacturing

PACT Processes Help Transfer Technology (continued)

(Continued from page 2)

team members that hailed from three different organizations and locations, each with its own spin on the combinatorial chemistry process. By using this immersion technique, the combinatorial chemistry process was formally distilled and defined, and differences of opinion were resolved.

Although we knew the analysis data accurately captured performance requirements and the needed knowledge and skills, the Analysis Team, as so often happens, could not imagine how the fruits of its analysis labor would become a valid training design.

Using PACT design templates and tools, we lead the team through a two-day process to design the training while making sure that the content of the Performance Model and Knowledge/Skill Matrix was covered. This would ultimately serve as the foundation for combinatorial chemistry technology transfer training. We began the design process by "chunking" the training into three major events.

- ▶ Event A was an introduction to our client's approach to combinatorial chemistry and an orientation to this customized training process.

What Is Technology Transfer?

Technology transfer is a term that refers to moving knowledge, skills, expertise, equipment, technology, and/or methods from one person, company, or country to another. One of the best known examples of tech transfer is the way that technology moved from government funded space research into the private sector. In some ways, T&D is an example of tech transfer—where knowledge possessed by some is packaged and transferred to others.

This training event was delivered at the client site.

- ▶ Event B consisted of a detailed training curriculum that supported the technology transfer using several different delivery strategies.
- ▶ Event C included ongoing coaching and support (post-Event B).

Within each event, individual lessons were defined at a high level and classified as either information, demonstration, or exercise/lab. These were grouped into modules.

"The Rest of the Story"

The team-based analysis and design processes can seem grueling while the meetings are in progress, and this project was no exception. Yet it was the

(Continued on page 10)

Analysis and Design Team members often have trouble understanding how their work will result in training events.

PACT Processes Help Transfer Technology (continued)

We used the “divide and conquer” technique to enable five developers to work concurrently.

(Continued from page 9)

intense focus during the Analysis and Design Team meetings that enabled the Development Team to complete its work more rapidly than it otherwise would have. Five developers used our preferred “divide and conquer technique” for parallel development. The Lesson and Module Specifications from the design meeting guided us during detailed interviews of innovators and SMEs. At this point, we used the services of a training developer with a background in organic chemistry to help build the most technical lessons.

An issue the training design made visible was the need for a course map that could be adjusted in real time. The duration of individual lab exercises, for example, was completely unpredictable. Timing of the training delivery was, to a large extent, dependent on the learner’s progress.

As a result, we developed a “dynamic course map”—a calendar and magnetic preprinted lesson blocks on a white board that instructors could change when necessary.

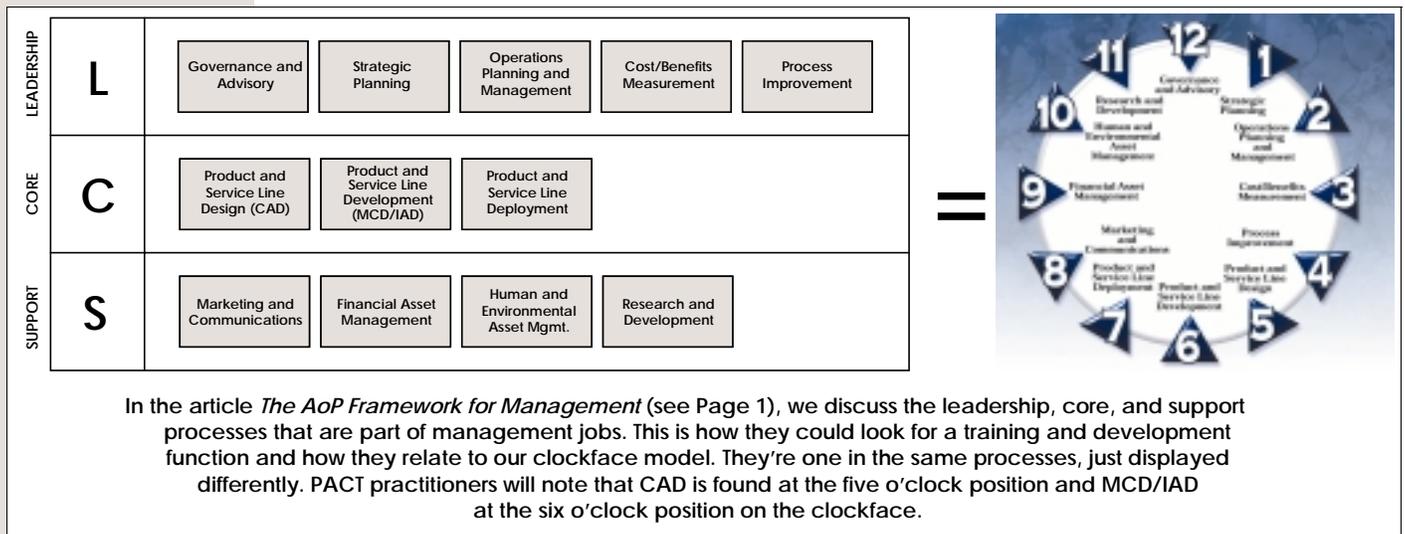
We further accelerated the development process by using innovators and SMEs on the Development Team. As a result, the training was ready for delivery at the same time our client succeeded in striking a technology transfer agreement with a leading pharmaceutical company.

Learning from the Process

We were reminded, as we often are, that if we shortcut the process or don’t involve the right people at all points of the project, we pay a price. In this case, the price was “scope creep.” Our design included training that supported 20 to 25 different chemistries. During the course development, the number of chemistries grew first to about 85 and later to more than 120, but our client was so pleased with the design that they begged off formal project reviews as we developed the 60 days of the design.

Of course, part of the problem was that the innovators were still innovating while we were developing the training. Nevertheless, this scenario reinforces the CADDI mantra of *trust the process*. ▶▶▶▶

Cost/Benefits Measurement (continued)



(Continued from page 3)

ing of all T&D metrics and provides the data (and interpretations, when appropriate) to the T&D leadership, staff, and all key customers and stakeholders on the value of the benefits for the costs incurred. The enterprise shareholders (owners)

would be most interested in these numbers. Note that this system is not a budgeting or financial tracking process, which is found at the nine o’clock position. There are four components of this system.

- ▶ Design and Deployment Measurement Processes

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Cost/Benefits Measurement (continued)

(Continued from page 10)

- ▶ Ongoing Cost/Benefits Measurement and Feedback Process
- ▶ T&D Project Processes Data and Lessons Learned/Communication Processes
- ▶ Reporting and Archiving Process

These processes must balance the *need* for cost data with the *cost* of collecting it. While it may seem obvious, requirements for a large quantity of detailed data with a high degree of statistical accuracy will drive the cost of collecting, analyzing, and storing the data. And while collecting data may be interesting, it serves no purpose unless something is done with it.

The first process, Design and Deployment Measurement, creates the “first costs” measurement system and puts it into operation within the T&D function. There are two components to T&D’s “first costs.”

- ▶ Benefits data on the effectiveness of T&D as measured by customers and stakeholders regarding how effectively T&D is (or is not) improving individual and business process performance. This is the “R” in ROI.
- ▶ Cost data from T&D’s own internal processes for analysis, design, and development of T&D, which are found in positions five, six, and seven o’clock on the clockface. This is the “I” in ROI.

Once the first process has been designed and deployed, the Ongoing Cost/Benefits Measurement and Feedback process begins to capture the “lifecycle” data from the customers, suppliers, and stakeholders so that the impact of training (as in Kirkpatrick’s four levels of evaluation) can be measured. This includes measuring their level of satisfaction with the T&D products and services, and the overall T&D function, data necessary for calculating maintenance costs, deployment costs, and all other return on investment, economic value add, etc.

The third process, T&D Supplier Data Collection Processes, captures financial and nonfinancial data on the internal functioning of the T&D organization not captured elsewhere and how well its own processes are working.

For example, the noncost issues and resource needs of designing and developing training (in all its myriad formats) are captured and analyzed. This data serves several purposes including estimating future projects, lessons learned, communication, determining staff levels, and making proc-

ess improvements to keep the cost of T&D overhead in check.

And finally, the Reporting and Archiving Processes document and report the raw data, if needed, and turn it into user-friendly information for distribution to customers and stakeholders. The effort, though seemingly straightforward, must be carefully managed to avoid information overload on the enterprise. On the other hand, T&D functions must report the results of their work if they are to be seen as contributing to the enterprise’s business performance.

Of course, these four “process steps” could have been configured and articulated differently. If it doesn’t make sense for you to *adopt* this view, *adapt* it!

$$\text{ROI} = \frac{\text{R-I}}{\text{I}}$$

RETURN \$
INVESTMENT \$

4 Process Improvement System

Continuous improvement (incremental) and discontinuous improvement (radical) reflects the ongoing efforts to refine and perfect T&D systems based on feedback from (in the *Learning by Design* model) the Cost/Benefits Measurement System and other sources (12 o’clock). It consists of three main processes.

- ▶ Issues Generation and EVA/ROI Assessment Process
- ▶ Improvement Project Planning Process
- ▶ Improvement Project Management Process

Most T&D organizations conceptually recognize the merit of responding to customer input and changing their products and services based on feedback. What varies greatly between T&D organizations is the formality and consistency with which this is done.

The first process in this system is Issues Generation and EVA/ROI Assessment. It is within this process that the literally hundreds of continuous (and discontinuous) improvement opportunities within the T&D organization are sorted and selected for implementation. The *Learning by Design* bias is to choose improvement opportunities based on their potential return on investment or economic value add. The logic behind this bias is

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The T&D function must report its results to the enterprise if it’s to be seen as contributing to the success of the enterprise.

Cost/Benefits Measurement (continued)

(Continued from page 11)

the same logic behind performance-based T&D: it must improve the company's ability to achieve business objectives.

Process improvements must always yield a positive return on investment for the shareholder. After all, it's their money (equity)!

Once potential improvement targets are identified and assessed, they are planned in the Improvement Project Planning Process and managed to

completion in the Improvement Project Management Process. These processes can use one of many standard quality improvement project planning and management techniques found readily in the human performance technology and quality marketplace.

In our spring newsletter, we'll begin looking at the next group of *Learning by Design* systems: the *core systems of processes* in which performance-based T&D is spec'd, designed, developed, and deployed. ▶▶▶▶

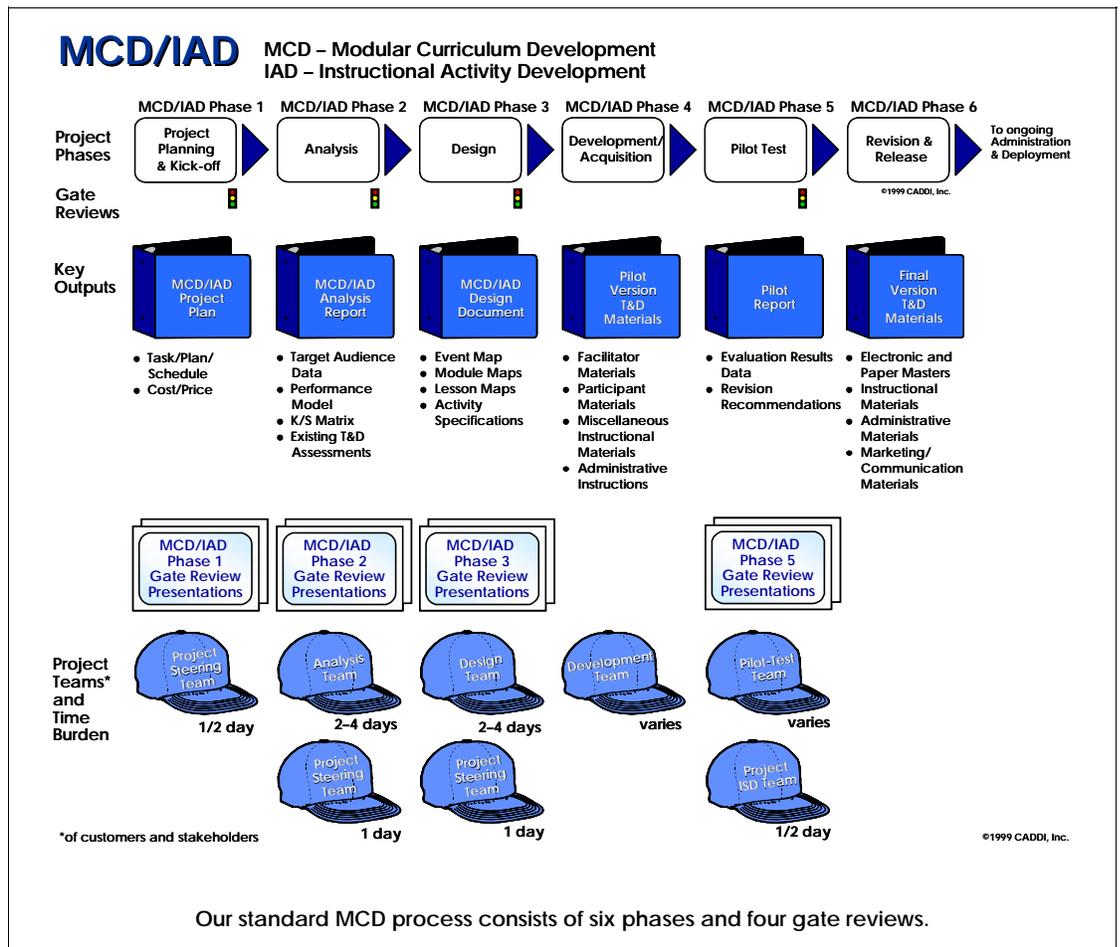
Shortening Cycle Times with MCD-lite (continued)

(Continued from page 6)

And so we begin with the premise that standardized processes with defined phases and checkpoints are *always* the place to *start*. But no ISD model or approach can ever be so robust that it can be applied in a totally common method and

be appropriate to every situation. Our projects are initially fitted into our standard models, and the project's unique requirements mean adjusting and adapting. Always! Our motto is "adapt or die."

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Shortening Cycle Times with MCD-lite (continued)

(Continued from page 12)

What is MCD-lite?

MCD-lite is an abbreviated version of MCD that—in certain cases—combines specific phases of our standard process, eliminates review points, or skips pilot testing. As we've said before, one size does not fit all so, in some cases, we may take any, some, or all of these steps.

MCD projects that follow a Curriculum Architecture DesignSM (CAD) effort have both analysis and design data that can be leveraged in the downstream efforts. *Leveraged* means that the efforts and cycle time can be reduced, but only if the CAD analysis and design data is sufficiently detailed, accurate, and appropriate.

Assuming that the quality of the CAD outputs/MCD inputs is not an issue *and the politics* of the content or project will not be an issue, then the MCD process might be shortcut a bit if needed.

But other factors related to the content itself are also determinants of going *full*-MCD or MCD-*lite*. We have done many MCD projects at CADDI for our clients in the *lite*-r approach. In fact, our MCD projects are really combos/hybrids of MCD-*full* and MCD-*lite*!

MCD is accelerated by involving the right people at the right times doing the right things and using common process steps and common templates to speed the effort. All MCD projects should be very much in control and very predictable in their schedules and costs. If not, the MCD project was probably poorly planned and/or poorly executed.

When to Go Lite

If the full MCD process, properly planned and resourced and executed, is already an *accelerated* approach to T&D/acquisition, then when would you/could you/should you go *lite*?

Suppose you are going to “clone” an existing piece of training and make minor modifications for similar content: creating another batch of overviews of other departments in the various business units of the enterprise. You could probably assume that shortcutting would be safer here than if the content is completely new and involved: federal regulatory penalties for inadvertent but typical messups in reporting both compli-

MODULE CONTENT	FULL MCD	MCD- <i>lite</i>
Company overview and orientation (history, values, culture, org charts, etc.)	▶	
Expense reporting policies		▶
New product development process skills	▶	
Materials and tool locker checkout procedures		▶
Generic spreadsheet skills		▶
EPA regulatory compliance	▶	

One of the important considerations when choosing a full versus a lite MCD is content.

cated, hard-to-get data, and then the equally complex internal interpretations and issue resolution recommendations.

But developing training content intended to only make people aware of a concept, or straightforward factual information delivered over the intranet, are less complex and are less needful for the *all-hands-on-deck* approach of the Project Steering Team gate review meetings at predetermined milestones.

Doing MCD-lite

There are three types of approaches to *lite*-ning the MCD process, each with its own set of risks (to be planned for and then carefully managed!).

- ▶ Combine the MCD phases for analysis and design.
- ▶ Eliminate some or all of the Project Steering Team gate reviews.
- ▶ Skip the Pilot Test Phase altogether.

MCD-*lite* can utilize one, two, or all three approaches. But be careful! Let's look further at each approach.

Combining the MCD Phases for Analysis and Design

Combining MCD Phases 2 and 3 (Analysis and Design) reduces the cycle time by eliminating the

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Shortening Cycle Times with MCD-lite (continued)

(Continued from page 13)

documentation and review of the analysis data in between the analysis and design efforts.

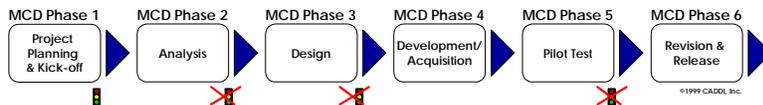
The risk is that errors and issues that arise during analysis cannot be taken to the Project Steering Team for resolution before continuing to the design activities and then building on bad data. This shortcut may cause rework (adding to both cycle times and costs).



Is this likely to happen? How stable/solid/controversial/political is the content (topics or performance that the modules may address)? Will there be such issues? Will the designated members on the Analysis/Design Team be able to come to consensus by themselves, and will anyone on the Project Steering Team or elsewhere in the enterprise take exception to the consensus and send everyone back several squares?

Eliminating Some or All of the Project Steering Team Gate Reviews

The intent of the Project Steering Team gate reviews is to facilitate customer *command and control* in a forum where the supplier can also participate in the dialogue. This forum provides the supplier with a mechanism to get consensus responses quickly on the supplier's project-related issues/needs.



In an enterprise university, the supply-side includes all university staff, the university deans, and any strategic ISD partners/vendors of the university.

Customers include any of the enterprise employees brought in on Project Steering Teams, Analysis Teams, Design Teams, etc.

Most MCD-lite projects should have at least the first gate review so that a Project Steering Team can evaluate the business risks before deciding to forgo the rest of the po-

tential gates, or to cherry-pick which one(s) they feel have business value.

These are business decisions that are generally best left to the customers and not the suppliers, with some exceptions.

It's the Project Steering Team members' (as customers) time we're talking about, and it's their people resources that will be expended (invested) in the MCD effort. They should decide whether or not it makes business sense to check in on the project from time to time.

Exceptions where less or even no gate reviews at all are needed are for those MCD projects where the content is not complex or controversial.

Some examples of that might include T&D focused on generic, enabling skills training such as word processing skills or spreadsheet skills. It is what it is—straightforward—and so a Project Steering Team isn't needed to guide the development/acquisition of the content. There is little return for their involvement.

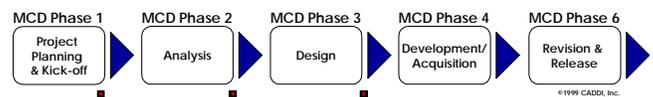
Skipping the Pilot Test Phase

The utility of the Pilot Test Phase as a quality check is most critical when the T&D is addressing a critical enabler for some high-payoff performance. But if the content is not complex or controversial, it may not warrant the effort and expense.

Some content should be developed/acquired and then published (in binders or to the enterprise's intranet) without all of the rigamarole of a formal pilot test. If there are issues discovered later, it was, after all, deemed no big deal by the Project Steering

Team in the first place.

Again, you should typically hold at least the first Project Steering Team meeting so that the decision is a customer decision in the first place. Suppliers making this call can always be questioned later on it: a no win for either side.



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Shortening Cycle Times with MCD-lite (continued)

(Continued from page 14)

The three preceding approach shortcuts for MCD-lite have to be thought through carefully. A “just do it” mentality can lead to a “haste making waste” result. Risk management with contingency planning is a must!

One can only make these shortcut decisions based on some level of experience with the MCD process in the real world, where big and little disasters from poorly advised shortcutting have been painfully experienced and lessons have indeed been extracted and learned.

MCD-lite Summary

Ultimately, the PACT Processes are designed to support the specific performance-based T&D needs of the enterprise and to reduce both cycle time and costs in doing so.

They are accelerated when properly planned, resourced, and managed to reduce both cycle time and cost. They emphasize sharing training content chunks (modules) within T&D products (events) where and when appropriate to reduce both cycle time and cost. And they promote more effective training by incorporating the right people at the right time to do the right things in an instructional systems design effort that is driven by the performance orientation of the Performance Model.

The PACT Processes, including MCD-full and MCD-lite, produce T&D that is *performance relevant* rather than *nice to know*.

PACT Processes are intended to help enterprise management allocate effort (people and dollars) to T&D projects that have the greatest potential impact to performance and to ROI. Typically, those projects are not good candidates for the MCD-lite treatment.

However, if the content is stable, and there is little likelihood for controversy, and/or if the content to be developed is an extension of content that can be a potential “clone” from something that already exists and works (use of templates), it may make best business sense to consider the shortcuts described above for MCD-lite. But as always, it depends. ▶▶▶▶



A full version of this article can be found on our Web site at CADDI.com.

CADDI News

Level 4 Practitioners Certified

Cathy Martin and Ric Byham are the latest PACT practitioners to receive their Level 4 certification. Cathy and Ric, both independent ISD contractors who work at General Motors, are now able to certify others to Level 3 and deliver CADDI's workshops on CAD Design and MCD Design. Congratulations! Next is level four for Project Planning & Management (PP&M).



Cathy Martin

Ric Byham

Best Wishes, Hans!

Our longtime colleague and friend, Hans Riemenschneider, is leaving the CADDI production staff for a new adventure: marriage and a new city. He and his new wife, Lisa, will make their home in Danville, IL where she is a PsyD intern at the veteran's hospital.



We've enjoyed our long association with Hans who is, by all measures, a true team player—someone who has been willing to pitch in and help with any CADDI task.

Congratulations and best wishes, Hans and Lisa.

Congratulations, Dave!

The entire CADDI crew sends its congratulations to Dave Smith of General Motors who has left the world of work for the world of retirement. Guy was pleased to attend Dave's November 19 retirement party where he met Linda, Dave's wife, and his son Todd and his wife.

lean-ISD Book Goes to Press

MaryBeth O'Hara, CADDI's quality assurance manager, tells us that Guy's *lean-ISD* book has officially been shipped to the printer who tells us that it will hit the CADDI bookstand in early 2000. Copies can be ordered through our offices starting in February.



Sporting CADDIwear

Who is this man that makes a CADDI fashion statement? Find out at www.performancedesignlab.com

CADDI CREWMATE PROFILE

Jeff Carpenter Joins CADDI's Consulting Crew

Jeff joins us from Ameritech where he was a manager of instructional design.



We're pleased to welcome Jeff R. Carpenter as the most recent addition to CADDI's consulting crew.

Jeff is a former manager of instructional design for Ameritech Corporation in Hoffman Estates, IL, where he worked for nearly four years. In addition to his project management skills, he brings extensive experience in the design and development of multimedia, electronic performance support, and Web-based programs.

"I'm looking forward to applying CADDI's structured approach to ISD," he said. This is especially important as more and more companies are leaning toward intranet-based training programs. "I've found that the T&D world can be easily swept away with anything that calls itself computer-based training, distance learning, or interactive design. But technology and training are good partners only when the result is improved performance."

From Jeff's viewpoint, the PACT Processes are a natural solution because they force subject

matter experts, designers, and developers to stick with the knowledge and skills that are needed to enable performance.

Partners Guy Wallace, Pete Hybert, and Kelly Rennels Smith are pleased that Jeff joined CADDI. "Jeff has a great list of accomplishments to his credit," Guy said. "And his bias toward improving business performance as the singular goal of training is very welcome for us and our clients."

Early in his Ameritech career, Jeff helped the company "spin up" managers who would need to serve in frontline positions if organized employees were to walk off their jobs during contract renegotiations.

He and his team designed a testing process to determine what managers knew and didn't know. This not only helped determine the training's content, but made it easier for managers to select only those portions of the training that would build needed skills.

Then, using a combination of structured, on-the-job training and performance support tools, they trained 1,500 managers in a four-month period.

Jeff earned a bachelor of general studies in human resources (with minors in Spanish and History) from the University of Nebraska in 1995, and this year he received an MA in training and development from Roosevelt University in Chicago.

"I always wanted to be a history teacher," Jeff reflected, "but my folks suggested that I needed to be more practical, especially when it comes to paying the bills."

He and Mendy, his wife, are the parents of two boys, Martin (eight) and Alex (five). Both boys are somewhat taken with dad's special gift of writing children's books that, at some point, Jeff would like to have published.

Jeff is currently working with Kelly on a security course for Siemens Building Technologies, a CADDI client in Buffalo Grove, IL. ▶▶▶▶