Is the Old ISD Paradigm Dead?

by Guy W. Wallace

It may be an undercurrent of quiet discontent within the T&D rank and file. Or, it's openly talked about around the T&D office coffee maker, or worse, in face-to-face confrontations with your internal customers.

Regardless of where it's heard or who says it, there seems to be growing murmur in business and T&D circles that the way training is spec'd, designed, developed, and deployed isn't working the way it needs to.

Are such concerns valid and is it true that the old ISD model as we've known it is really dead or dying?

While we can't speak for every company or ISD practitioner, it's true that the ISD models used in many (if not most) companies have failed to deliver on their hope or promise of improved business performance, Return on Investment (ROI), and Economic Value Add (EVA). Why is this?

Although there are many models for instructional systems design, most are based on steps that analyze, design, develop, implement, and evaluate—the ADDIE model from the 1940s.

There are "one-offs" or "two-offs" of this original model, but the world of ISD as a process has been relatively stable since then. Some might say that it is pretty much cast in concrete. "That's the way it is," as Walter Cronkite would put it.

Business Embraces New Methods

While ISD methodologies remained essentially static in the last five decades, the worlds of mar-

keting, engineering, manufacturing, and finance (to name a few) have undergone radical change. Systems-thinkers have dramatically rethought the ways enterprises bring new products and services to the marketplace. These new models have been taught almost everywhere.

Marketers have sought the voice of the customer (VOC) to influence design engineers on what was really important and how to differentiate their products. Processes such as QFD (remember Quality Function Deployment?) were used to

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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

Inside

Imperial Oil Wins ISPI Award of Excellence

by Peter R. Hybert

Congratulations to Imperial Oil Company of Canada and to Louise Leone, Manager Automotive Retail Development and Recruiting, and her organization—particularly Fred Brown and Marcel Ouellet, Automotive Retail Training Managers.

Louise and her team from Canada's largest integrated oil company are recipients of an International Society for Performance Improvement (ISPI) Award of Excellence for an Outstanding Instructional Product or Intervention for the company's retailer development program. We have been following their progress during the past three years as they have steadily pulled together the elements of the program following a Curriculum Architecture Design project led by CADDI partner Pete Hybert and senior consultant Dottie Soelke.

"Bringing together the necessary master performers was not easy, but it set us on the right path, both in terms of addressing the critical business issues and having their credibility behind the project," Louise points out.

Imperial Oil dealers perform a wide range of tasks, including general business management, merchandising, retailing, hazardous materials tracking, and basic mechanical troubleshooting. Based on the analysis data and other anecdotal information, the team targeted the critical start-up phase of a new dealership—a time when the learning curve is the steepest and the risk of failure the greatest.

Imperial's retail development organization then developed a comprehensive program to ensure that new dealer performance would be reliable in spite of variation in the dealers' experience, the mix of products they offer, and the marketplace.

The program that resulted was a combination of self-study, CD-ROM, classroom, and structured coaching sessions. It received very positive feedback from the participants and from Imperial's territory managers. More importantly, business benefits were reported by Imperial territory managers and measured by the company's "checkpoint process" including

- Improved compliance with retail and merchandising standards
- Increased adherence to facility management standards and practices
- Greater adherence to gasoline handling practices and regulations
- Reduced coaching time

Finally, Louise believes that the program gives Imperial Oil a competitive advantage. Based on a best practice study conducted in 1998, Imperial offers dealers comparable, and in some cases more extensive, start-up support than that offered by much larger organizations. This support helps in the recruiting process and to leverage the time that territory managers have available for coaching. ▶▶▶▶

Join the CADDI Crew
At ISPI's Annual Conference, Cincinnati, Ohio

Kelly

Guy

Pete

Dottie

▶ *Performance Modeling and Knowledge/Skill Analysis Workshop (Preconference Workshop)* with Kelly Rennels Smith

Tuesday, April 11 @ 8:30 a.m. to 5:00 p.m.

▶ 99 Seconds: *Performance Modeling* with Guy Wallace

Tuesday, April 11 @ 5:00 to 6:30 p.m.

▶ *Just Do It—Performance-based Qualification* with CADDI's Pete Hybert and Kelly Rennels Smith, and Siemens' Dennis Smith and Mark King

Wednesday, April 12 @ 4:00 to 5:30 p.m.

▶ Cracker-barrel: *Performance Modeling* with Guy Wallace

Wednesday, April 12 @ 6:00 to 7:30 p.m.

▶ *Training and Development Systems View* with Guy Wallace

Thursday, April 13 @ 11:00 a.m. to 12:30 p.m.

▶ *Qualifying Your Sales Force* with Kelly Rennels Smith

Friday, April 14 @ 10:00 to 11:30 a.m.

▶ *Portfolio Project Management* with Dottie Soelke

Friday, April 14 @ 3:00 to 4:30 p.m.

For more information, contact ISPI at (202) 408-7969 or visit their Web site at www.ISPI.org

Visit the CADDI Expo Booth 102/104!

Update on CADDI Projects

Siemens Building Technologies, Inc.—Landis Division

Kelly continues to manage 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

Pilots for these have been set for Spring of this year.

Other upcoming Siemens work includes a project to produce a CAD for sales managers.

Pete is continuing to work on the development of a curriculum architecture to support a new system planned for introduction in the Fall. The team is designing a comprehensive curriculum that first addresses all the needs of a new employee, and then backs out the modules that support the roll-out of the system to the existing audiences. As usual, our goal is to share development wherever possible. In this case it also means sharing modules across job roles (sales, engineering, technician) and coordinating with the technical documentation group to share (and/or avoid overlapping) content.

Hewlett Packard

A previously trained PACT Process practitioner within HP is planning to use the PACT Analysis process to populate a skills/development inventory. Pete discussed how to align the PACT outputs with existing skills framework and work process models with the project leader. They were particularly interested in learning how another CADDI client used the PACT Process Analysis outputs to populate their SAP system's HR module. We wish them much success with the endeavor.

General Motors University

The GMU Brand MCD project supports training and development needs for the Brand Management and Marketing organizations at General Motors. Target audiences include brand analysts, assistant brand managers-marketing, assistant brand managers-product, and brand managers, all of whom are members of the brand teams.

While we are entering the Development/Acquisition Phase, this is a fairly large project with almost 300 modules to develop/acquire (most of them are small, self-paced readings, but a few are full-blown group-paced Events). Because of the volume of modules involved, the Analysis/Design and Development/Acquisition Phases will overlap a bit.

Four Analysis/Design sessions have been completed and documented to date, as has some off-line design work and we still have more modules to design. Mark Bade, of Bade and Associates, is leading the ISD developers/writers who started interviewing subject matter experts in earnest during February. Once completed, we will begin developing instructional materials using the developers' Instructional Activity Development (IAD) templates that were created for GMU. The plan is to web-deploy the MCD products of this project through the GM Intranet.

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

GTE

Guy and Pete have just started a CAD project focused on two types of "billing associates" at five centers across the United States. Project activities began with site visits at Durham, NC and St. Angelo, TX. The Project Steering Team and various CAD Analysis and Design working meetings will be held in the Dallas area. ▸▸▸▸

CAD Project Offers 360 to 1 ROI

by Kim Peterson

> Kim Peterson became a PACT practitioner in 1996. She has conducted more than 22 PACT Analysis sessions, and produced 11 CAD and 11 MCD designs since that time. In this article, Kim tells how she and her team are helping solve a costly, high-tech business problem using PACT Processes that she's adapted to meet some unique requirements.

Automotive designs are now created using sophisticated software that encompasses the functions of traditional Computer-Aided Design and Computer-Aided Manufacturing. Today, instead of paper drawings, designs exist as a set of master data on a file server accessed from multiple locations in real time.

This new design method ensures that program teams are working from the latest—and same—data as they simultaneously develop assemblies,

sub-assemblies, and parts. Master data streamlines work by eliminating redundant design and engineering tasks that occur when a designer changes a component. Such changes can often affect the configuration of multiple components for which other engineers are responsible.

Master data also provides immediate access to critical information. Previously, a designer might wait weeks to review a design. In this process, designers and engineers might walk around a table on which a design drawing would be reviewed. A time consuming and tedious process. Master data fulfilled its promise of eliminating this problem.

While the software solved the data access problem, the handoff and approval process used by engineers and designers to approve design changes remained difficult, cumbersome, and costly. Engineers estimated the percent of time they spent on inefficient tasks such as rework of existing designs.

The use of master data permitted immediate access to current engineering files but it didn't resolve handoff and approval problems.

Not Just Anyone Will Do

by Guy W. Wallace

It may be heresy to say so, but not quite everything in business requires forming a team to get it done. Only some things. Like creating curriculum architectures, designing and developing training, and some other activities.

But there are teams and there are *teams*. We don't advocate forming teams so we can say "a team created this training, so it must be good." Generally, that approach is akin to "horse design by committee" and produces either camels or training with multiple humps.

Rather, we use teams in highly structured ways: precisely defined roles, responsibilities, inputs, outputs, reviews, etc. Many teams in PACT Process projects are handpicked—by another team: the Project Steering Team (PST). The PST was also handpicked by the customer. People on PACT

teams are the kinds of valuable people who are sorely missed back at the ranch when they are selected to be part of a PACT Process team. They are not your usual "friends of training" who always are available to lend us ISD'ers a hand. They are folks who aren't afraid to stand up and tell you when you've got a bad design or when you're replacing the correct performance orientation with a sprinkling of foo-foo dust.

The Team Structure

As we wrote in the Summer 1999 edition of *lean-ISD*, PACT Processes use a hierarchy of teams to guide and advise the T&D organization and to accomplish its work. The Governance Board and the supporting Advisory Councils are permanent teams with rotating memberships that represent

The Core Systems and Processes for T&D
by Guy W. Wallace

Today's business world has been sliced and diced into more process pieces than a veg-o-matic could produce for a stir-fry dinner. This isn't a bad thing, but it can be confusing.

It's probably fair to say that we've contributed to this when we sliced training and development business processes into twelve parts that fit so well around the face of a clock. Are there really just twelve? Why not eleven or thirteen? The answer is that the number of pieces and what they're called is somewhat arbitrary. What is important is the purpose they serve.

This is a timely topic because, more and more, T&D organizations are succeeding and failing based on their ability to improve performance. To the executive, improved performance = return on investment (ROI).

Training with a positive ROI doesn't happen by accident: it's planned, developed, executed, and monitored with rigor (not too much, not too little). Our clockface model depicts the twelve *systems* that the T&D organization uses to do this.

The positions starting at twelve through four o'clock provide *leadership and direction* to the entire T&D efforts. Positions five, six, and seven are T&D's *core systems and processes*. We call our version of 5 and 6 o'clock "The PACT Processes for T&D," although you will likely refer to yours by different names. And finally, positions eight through eleven are *support systems*.

In this newsletter, we're going to look at T&D's core systems and processes. In the world of T&D, these are the systems that design, develop, and deploy T&D. Specifically, they are

- 5 o'clock: T&D Product and Service Line Design Systems. This core system creates a systems view of the entire product and service line (we call this an *architecture*) or a curriculum architecture—one of CADDI's PACT Processes for T&D.
- 6 o'clock: T&D Product and Service Line Development Systems. This system then makes or buys (and modifies as needed) the products or services consistent with the priorities established by the curriculum architecture and in the multiyear development/acquisition plan for putting the high pay-off T&D in place.
- 7 o'clock: T&D Product and Service Line Deployment Systems. This system deploys the products produced in the previous system. In

> *More and more, T&D organizations are succeeding and failing based on their ability to improve performance.*

"services rendered" terms, this means scheduling, registering, ordering, and shipping of T&D.

Product and Service Line Design Systems. One of CADDI's core processes is our Curriculum Architecture Design (CAD) process, the least traditional of the PACT Processes. This system doesn't produce training, it produces a structure for training. Said in a non-work way, it produces the map you'd follow when taking the family on the summer vacation.

In this system (CAD Phases 1 and 2), we *analyze* a job, job family, major departments or functions, or even whole divisions and companies. This analysis produces a Performance Model along with the knowledge and skill requirements that enable performers to perform. We also analyze training that currently exists for the targeted job(s).
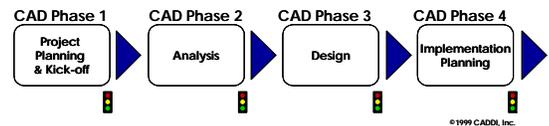
In CAD Phase 3, we create an inventory of Modules that sort huge pieces of training into manageable "chunks" (based on some very specific rules.) These Modules have specs attached to them: how big, what content, how delivered, etc. Related Modules are then combined into T&D Events. We use the term "Event" instead of "class" because learning can be designed in many ways other than formal classroom training. These Events are then placed on a Path—a visual, sequenced flow of learning. The sum of all these pieces is what we

New Web Site Launched

by Jeff R. Carpenter

Circle April 3 on your calendar as the day to click your way to CADDI's all-new Web site at www.CADDI.com. That day marks the culmination of weeks of re-engineering to make our site more friendly to our many clients who have found it to be a great source of articles, newsletters, and information on PACT Processes for T&D.

Why did we change? It became apparent for the past year that we needed to better meet your needs for the latest in *lean*-**ISD** technologies. As a result, we hope you'll find the new e-CADDI community useful and that it will

The new CADDI Web site is the only source you'll need for on-line entertainment and for producing lean-***ISD.***

‣ Allow the practitioners and non-practitioners alike to share their ideas about the PACT Processes.

‣ Create a continuous dialogue between the CADDI crew and the PACT practitioners.

‣ Share the wealth of new tools that will be coming out throughout the year to help you design and create successful *lean*-**ISD** projects for even the toughest customers.

Here's what you'll get when you visit the new www.CADDI.com.

‣ Participate in bulletin boards where you can trade information on PACT Processes, tell "war stories," offer helpful hints, discuss lessons learned, etc. We've designated this section as a "partner- and consultant-free zone" where you can tell the good, the bad, and the ugly about your PACT Process experiences (all in good taste, of course) without fear of editing by the CADDI staff.

‣ Ask questions of the partners and consultants or solicit advice about PACT Processes, theories, and methodology.
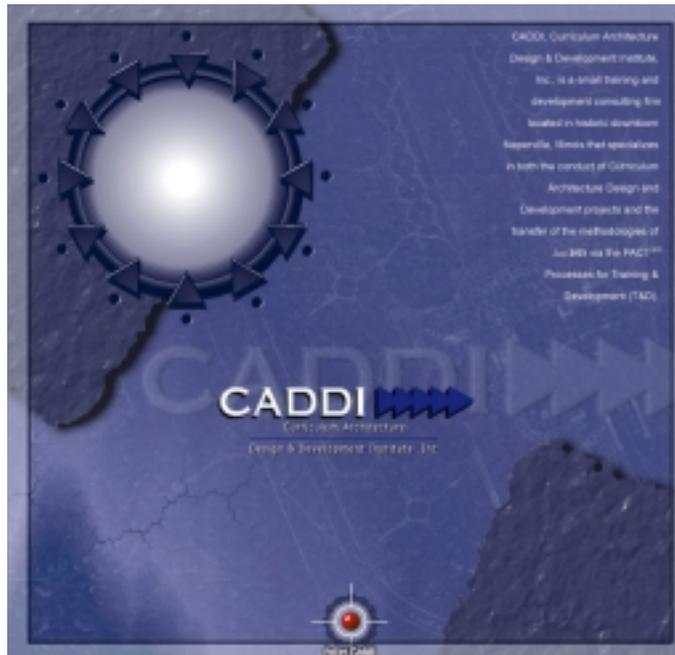
‣ Search for articles from the CADDI library.

‣ See a demo of our new PACTool and drill into Areas of Performance, Performance Models, and the Knowledge and Skills needed to create performance-based T&D.

‣ Read reviews of and purchase Guy's newly released book, *lean*-**ISD**.

‣ Register for PACT Processes Workshops.

‣ Visit Knowledge Nuggets to discover which learning model belongs to which theorist and what they actually mean.

‣ Join the on-line entertainment by playing Gopher Games (coming soon)

‣ And much, much more.

So, circle April 3 on your CADDI calendar (or put a reminder in your electronic version) and prepare to click your way to CADDI on the 'net—the only source you'll need for on-line entertainment (and for producing *lean*-**ISD**). ▸▸▸▸

Super Area of Performance: Leadership
by Guy W. Wallace

When modeling leadership performance, focus on performance first rather than only articulating the personal characteristics and traits of someone doing the job.

The Leadership Super AoP is, without doubt, the most discussed, debated, and misunderstood of all AoPs. Everyone has a slightly different paradigm of leadership. What exactly is leadership anyway? Is it nature, nurture, or both? Are leaders made or born? Does it include management stuff, or is that separate? Can nonmanagers be leaders? What is the *right stuff* of leadership?

The whole subject of leadership has been a lucrative field for many management and leadership gurus (some noteworthy, others notorious). We don't propose to join the fray except to say that when modeling leadership performance, one needs to do two things.

▸ Have a model or scheme to identify clearly what leadership is and what it isn't. For example, is reviewing the financial reports of the T&D organization leadership, or is it one of the nonleadership duties of a manager?

▸ Focus first on *performance* (tasks and the outputs, outcomes, and results of those tasks) and then on the *enablers* (knowledge, skills, attributes, and values), rather than only articulating the attributes (personal characteristics and traits) of someone doing the leadership job.

AoPs Are Really Chunks of Worthy Results

When we coined the term "Areas of Performance" (AoPs) to describe our method of chunking out work for T&D analysis purposes, we did so knowing that *performance* is really what businesses need from their employees. Businesses don't want to become "learning organizations." Ideally, they want to become high-performing organizations. Learning, or T&D, is simply one of the many means to the end state of becoming high performing.

Performance is more than mere knowledge. It connotes activities that produce, in the words of the late Thomas F. Gilbert, "worthy results."

AoPs provide a segmentation scheme or approach to the analysis, design, and development of performance-based T&D. Because they organize the view of the job or task into a logical framework, they can also serve other performance improvement interventions. Such a framework would allow us to analyze many jobs and functions across an entire enterprise and readily see the commonalities of task (and, therefore, T&D), as well as all of the unique aspects of the job (and, therefore, the T&D as well).
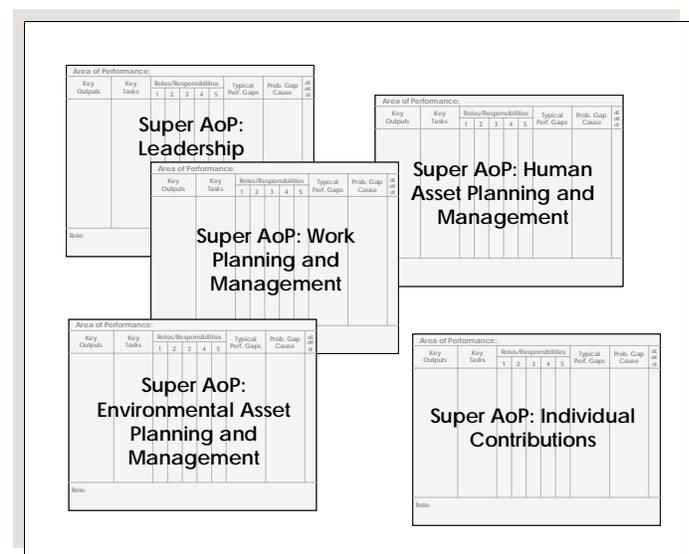
Sharing chunks of T&D saves both first costs and life-cycle costs for the enterprise's T&D function. The savings could be so great that they could, in many cases, fund the operating budget of the T&D organization. The impact of performance-based T&D should help increase revenues, reduce operating costs, and increase profitability of both line and staff operations.

We've organized AoPs into a framework of five Super AoPs. The first four Super AoPs are for executives, managers, supervisors, and leads. A fifth Super AoP organizes the AoPs for individual contributors. But managers are, at times, individual contributors. Because the framework fits everyone in the enterprise into a picture of the "whole," the T&D organization (or the quality organization) can use it to analyze systematically all of the critical business operations (functions performing within business processes they either own or support) and have it all hang together.

PACT WORKSHOP SCHEDULE

Workshops that teach you to administer, plan, manage, and use the PACT Processes for T&D.

▶ PACT Analyst Workshop

May 15-19
September 25-29

AUDIENCE: PACT practitioners who will function as analysts in any of the three PACT Processes for T&D. You'll be able to
- Conduct a Target Audience Data effort.
- Facilitate an Analysis Team for Performance Modeling and K/S Analysis.
- Conduct post-Analysis Team meeting assessments of existing T&D.
- Prepare for the Project Steering Team gate review meetings at the end of the Analysis Phase.

▶ Curriculum Architecture Design (CAD) Designer Workshop

June 19-23
October 23-27

AUDIENCE: PACT practitioners who will function as CAD designers. You'll be able to
- Prepare for a CAD Design Team meeting.
- Facilitate the Design Team meeting.
- Conduct Design Team meeting clean-up.
- Conduct both the follow-up activities in preparation for the gate review meeting and conduct the Project Steering Team gate review at the end of the Design Phase of a CAD project.

▶ Modular Curriculum Development (MCD) Designer Workshop

July 24-28
November 13-17

AUDIENCE: PACT practitioners who will function as MCD designers. You'll be able to
- Prepare for an MCD Design Team meeting.
- Facilitate the Design Team meeting.
- Conduct Design Team meeting clean-up.
- Conduct both the follow-up activities in preparation for the gate review meeting and conduct the Project Steering Team gate review at the end of the Design Phase of an MCD project.

Each workshop is five days in length and runs from 8:00 a.m. to 5:00 p.m. Monday through Friday. The registration fee is $2,500.00. Participation is limited to 8 or 16 people in each workshop. They will be delivered at the CADDI offices and training facilities, riverside, in downtown Naperville, IL, about 40 miles west of downtown Chicago.

Call us at (630) 355-9800 for information regarding local ground transportation, hotel listings, and daily transportation to our site, or visit our Web site at CADDI.com.

CADDI reserves the right to cancel any scheduled delivery, for any reason. Cancellations will typically be made two weeks in advance of a workshop's start date, unless otherwise uncontrollable.

Involved Learners Learn Better

by Dottie A. Soelke and Jeff R. Carpenter

Multisensory learning means using at least two of a learner's five senses to increase retention of information.

Training that is spec'ed, designed, and developed from clearly defined Performance Models will result in better performance, right? The answer is a resounding "maybe." Although there are many factors that determine whether training "takes," one of the most crucial is the manner in which training involves learners in the learning process.

If there were to be a magical formula for involving learners, it might be found in a simple rule: involve their senses—and the more sensory involvement, the merrier (generally) and the more effective the training. The technical term for this is multisensory learning.

What is Multisensory Learning, Anyway?

We won't go into cognitive and multisensory learning theories in depth here (see our Web site—CADDI.com—for more detail), but multisensory learning means using at least two of the five senses to increase the retention of information. The theory says that in doing so, learners process information more quickly and completely because the use of multiple senses helps create multiple cognitive paths for information retrieval.

Mom didn't realize she was using this theory when she taught you the "ABC song" to help you learn the alphabet, but she was. Visually, you *saw* the letters. You sang them and your ears *heard* them. You might have even *touched* them if she'd cut letters out of felt and you stuck them on a felt board. Learning doesn't get much better than that!

Multisensory Learning Meets the PACT Processes

The ISD professional is always looking for the right technique to promote better job performance. In fact, it's never too early to start thinking about engaging the performer's senses in the learning process.
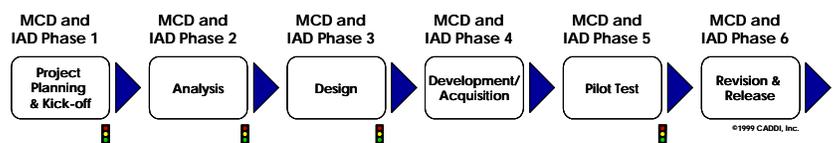
There are at least three logical places within CADDI's Modular Curriculum Development (MCD) and Instructional Activity Development

(IAD) Processes to do this
- Project Planning & Kick-off Phase
- Analysis Phase
- Design Phase

Project Planning & Kick-off. Let's assume that you're working with (or in) a company that needs to hire and train a large number of software technical support employees (say 300) and get them up to speed and functioning in a short period of time. They need to handle telephone calls from customers, diagnose customer problems, and act quickly to resolve the problems. You learn this in the Project Planning & Kick-off Phase—the phase in which you scope the project, get an overall sense of its purpose, and gather enough initial data to intelligently plan and begin the project.

It is in this first phase that you may get some sense of what the training deployment method needs to be. For example, if the 300 tech support employees are to be hired all at one time and from the same location, classroom training may be appropriate. More than likely, however, these employees will be hired over a period of weeks or months and, to further complicate things, they may be geographically widespread. In this case, some sort of computer-based/Web-deployed training may be advisable.

MCD and IAD Phase 1	MCD and IAD Phase 2	MCD and IAD Phase 3	MCD and IAD Phase 4	MCD and IAD Phase 5	MCD and IAD Phase 6
Project Planning & Kick-off	Analysis	Design	Development/ Acquisition	Pilot Test	Revision & Release

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In the **Analysis Phase**, you discover that learners need specific product knowledge. They need to problem-solve over the telephone. And they need to know how to operate a new computer software system that tracks customer calls. In this phase, you will uncover some of the more typical performance gaps. Perhaps, you discover that troubleshooting is a complex process involving a minimum of 14 steps in a decision tree. This is complicated by the fact that many existing employees don't know how to use the advanced features of the customer's software.

capture VOC as well as other voices from up and downstream in the process.

Engineers, embracing systems engineering and concurrent engineering concepts, have improved product quality and reduced both costs and cycle times in getting the product to market. The use of CAD (not Curriculum Architecture Design, but Computer-Aided Design) systems have reduced design times and encouraged engineers to use standard parts. This reduced the number of suppliers, inventories, and the costs to manage and administer all of the components needed for the final product. Service personnel and customers have been brought in—upstream in the process—to give input and feedback much earlier than ever before.

Manufacturing has begun to use work pods and other new-fangled concepts and practices to get lean, nimble, and quick.

Even bean counters have devised improved ways of counting beans, attributing less and less cost to overhead and more to specific operations, hence activity-based costing methods.

And then there seem to be teams everywhere, almost to the point that no employee can escape being on one to a dozen teams simultaneously. In many cases, their goal is to improve the business products and services by reducing variation. Once the initial cheerleaders of the quality movement learned that "Zero Defects" is statistically impossible, they settled on VR (Variability Reduction) or "Six Sigma" (four bad parts out of a million opportunities), or the latest, the "5 Nines" (available/ontime 99.999% of the time.)

Unchanged Paradigms

But failing to take its cue from the business world, ISD as we've known it, has remained essentially unchanged. An overwhelming number of ISD efforts in most (not all) companies (big and small) produce non-standard outputs, employ non-standard processes, and seem to be driven by personal preference and the individual paradigm of each practitioner.

Failing to speak the customer's language, we talked with them in our ISD jargon that they had little motivation to learn, and then we gave them customer-unfriendly outputs. The result: custom-

ers who saw chaos, if they stuck around long enough.

They viewed our analysis efforts as "analysis paralysis." They saw us as too slow, as artists and not T&D product engineers. They found no visible structure to the total T&D product line and to the piece parts of T&D that we developed for them. They looked up after many ISD projects and saw that we had built lots of redundant content because there was no ISD method for creating, storing, and later finding content in chunks that could be re-used and shared, reducing both first costs and life cycle costs. Inadvertent, but real.

From the Executive Knothole

Executives saw the ISD process from yet another vantage point. They looked coldly at the money and resources being consumed and couldn't really put their finger on what it was giving them in return. What is the ROI for T&D? What is its EVA? They have a fiduciary responsibility to the shareholders for taking good care of the shareholder's equity. They best not squander it on wasteful practices.

Take the problem of redundant T&D content, for example: a big deal if you are the owner of that business. Let's say your business makes computer printers. In the new world of manufacturing you'd likely standardize the power supplies and electrical cords to reduce first costs. Then you'd teach your repair people how to troubleshoot the one power supply that is shared among all makes and models.

For many executives, recognizing the disconnect between systems thinking, standardized products, and the old ISD methodologies doesn't even require reading glasses. "Why is it that we're reinventing this training? Why isn't this stuff standardized the way we do in manufacturing?" the executive asks. "Gee," the executive continues, "it looks like T&D and the organization exists in a vacuum—not in control, not in sync with the new realities, and with little or no visible structure."

Enough Frustration to Go Around

For the ISD professional, projects often became artistic endeavors—each one a start-from-scratch trip into an unstructured, creative world—without

Executives often take a very bottomline approach to training and ask, "Is this really delivering results?"

Is the Old ISD Paradigm Dead? *(continued)*

the benefit of a scientific or process-oriented methodology or system. Yes, they practiced ISD, but their own particular version of it.

The result is frustration for everyone.

Today, customers and executives are in a hurry—operating at Internet speed. Frustrated with poor T&D products, they are telling us "just do it." At the same time, they are trapped in using our services. They don't want to hear about analysis, which in 90 days will tell them what they already know. And they look at designs that seem to be nothing more than a hierarchy of instructional objectives trickling down into minutiae with an associated outline of content. It's not very inspiring or confidence building.

The result of "just do it" further nails the coffin of ISD: without a slimmed-down process for structuring, analyzing, and designing performance-based T&D, we're caught doing what we've always done—this time with the accelerator pegged to the floor with no map and a disappearing road.

The result of these rushed efforts during the development phase are multiple iterations that saps everyone of their strength and motivation.

Given these realities, what should we be doing?

A New Paradigm for ISD

When we redid our ISD paradigm/model more than 15 years ago and created the PACT Processes for T&D, we intended to build an ISD system that employed best practices from the engineering, financial, project management, and prod-
uct management worlds that we had been exposed to in our ISD projects. We benchmarked, borrowed, and stole techniques and tools from a whole raft of disciples within the corporation and embedded them into our own methodology.

Together, the PACT Processes for T&D are customer-friendly, engineering methods to create curriculum architectures, T&D Events, and Instructional Activities. They leave room for the artist in us all, but provide enough structure and discipline to serve the shareholder first. Competent employees developed by good ISD outputs and practices is in their best interest.

In the words of my CADDI partner Pete Hybert, "The PACT Processes for T&D reduce ISD to practice." Pete attributes this quote to an original from several of our clients at one company where they had realized that together we had "reduced combinatorial chemistry to practice" for the very same reason.

We have taken many of the ISD theories, principles, and models and rolled them into a set of procedures that work each and every time. We believe that our new book *lean*-**ISD** can help you and your ISD efforts practice a new ISD paradigm. Things change. It is the only constant. And we expect PACT to also change over time as well. We hope to be at the forefront of those efforts. But, it may be that the really great adaptation and evolutions come from our clients and friends who take our version of ISD, the PACT Processes for T&D, to heart and into the projects at their enterprise.

Good luck and *good ISD!* ▶▶▶▶

> *Frustration with T&D has resulted in a "just do it" mentality that is further nailing the coffin of the old ISD.*

CAD Project Offers 360 to 1 ROI *(continued)*

Using these estimates, it was projected that productivity could be improved by 20 percent. The return on investment for this project was estimated to be an amazing 360 to 1!

The Proposed Solution

The solution involved creating a third role that would take on some responsibilities of a designer and some of an engineer. This would eliminate the
interfaces required to get certain job tasks done. The solution would require

‣ Defining the role and responsibilities of the new designing engineer position
‣ Aligning the current responsibilities of the designer and engineer to the new role
‣ Supporting the new designing engineer by creating appropriate, coordinated, integrated requirements for education and training and development

CAD Project Offers 360 to 1 ROI *(continued)*

(Continued from page 12)

The solution offered some distinct advantages.

- The solution to the problem was predetermined by the customer and it was well thought out. It was also tested in specific programs that were staffed by engineers and designers who performed the designing engineers' duties.
- Support from leaders in the organization was very strong. A directive from the executives in the engineering and design organizations ensured a unified approach. The Steering Committee represented all functions affected by the project. This included engineering, design, human resources, education, training, information technology, and all functional divisions of the corporation.

The project also presented some challenges.

- The new designing engineer position required creating a compensation structure and career path sanctioned by the human resources department
- Changing the designer's job responsibilities could affect his or her annual salary. For example, in the current process, designers may be required to work overtime to compensate for process inefficiencies. Eliminating inefficiencies could result in a decrease in take-home pay.

Adapting the Process to Fit the Project

Since our customer was ultimately looking for an analysis of the jobs involved and the set of education and Training & Development Events to support the development of designing engineers, a Curriculum Architecture Design (CAD) seemed in order. We followed the standard CAD approach doing Project Planning, Analysis, Design, and Implementation Planning; but beefed up a couple of the phases. The Analysis Phase was more comprehensive. This phase included

- Creating Performance Models for current roles
- Creating Performance Models for the new role of designing engineer
- Identifying redundancies

The Design Phase integrated all developmental Events (including education requirements) needed to obtain the job, on-the-job assignments, and mentoring. Experience led us to believe that most of the Training Events that would be placed on the Path already existed.

Selecting the Teams

The high level of interest in this project and some very sensitive issues required the project champion to spend considerable time recruiting team members. Great care was taken to insure that team members had the support of the affected organizations.

To encourage support at the highest levels of the organizations, two Steering Committees were created: one operated at a strategic level and the other was empowered to do the work of the project. The Working Steering Committee reviewed all of our deliverables first. When the Working Steering Committee felt the need, they requested that key members of the Strategic Steering Committee attend meetings.

Our Analysis and Design Teams consisted of the same four people: one designer and one engineer from each of two major functional organizations of the company. The individuals selected by their respective management teams were deemed 'the superstars' of their organizations.

Analyzing the Situation

The analysis portion of the project was a lot of fun and a lot of work! Two members of the Steering Committee introduced the session, set the direction, and answered questions. They promised to return to review the progress and outputs of the team when we were ready. The Analysis Team members were dynamic, charismatic master performers who had a vested interested in making this project a success: they were to become designing engineers themselves. They caught on to the process quickly, provided all the data we needed, and raised insightful issues and questions for the Steering Committee.

After three full days of work, the team volunteered to return for an additional half day to review each of the 91 documented tasks to determine which should be done by future designing engineers. This exercise also had a more immediate application for the participants who were also participating in upcoming pilot projects. They used the session as an opportunity to think through the job prior to piloting the design engineer role. In addition, the team suggested ways to analyze and annotate the data for communication to the Steering Committee.

Designing a Solution

Our customers expected a complete curriculum architecture package that integrated education,

> *Great care was taken to ensure that team members had the organization's full support.*

Most of the design session was spent devising a deployment method for the modules derived from the AoPs.

training, certification for the job, mentoring, and on-the-job applications. This seemed overwhelming at first; but since we had project backing from the highest levels of the organization, we received all the support we needed. Armed with the knowledge that we could call on others to address any gaps that resulted, we held our curriculum design session with the same star performers that participated in the analysis session.

Laying out the right Events on the Training Path was fairly straightforward since we were well versed in the content. (We, the training professionals, developed many of the courses and they, the target audience, had attended most of the classes.) As expected, many of the Events were already available; of the 122 we placed on the Path, only 12 were gaps that needed to be developed.

Most the design session was spent devising a deployment method for the modules derived from the Areas of Performance. The team wanted to ensure that specific details of the job were delivered in the context of their highly technical, time-pressured work environment. Many pre-existing Events taught specific technical skills or tasks; the

gap was in the finer uses of these abilities in the workplace. Therefore, we decided to supplement the traditional classroom training with on-the-job developmental Events.

The Path started with an orientation to all aspects of the job. For the guts of job, we separated Modules by the deliverables a designing engineer was expected to produce. The team spent a good deal of time grouping these Modules into Events that could realistically be learned together on job assignments. Each Event corresponded to a single six-to eight-month stint on the job in a specific area. These were interspersed between Training Events in a progression that would allow a new hire to generate real outputs on the job with the help of a technical mentor.

How Will the Program Work?

The Design Team spent an additional half-day devising a mentoring program to support the designing engineer development. We sketched out roles that were required to administer such a program and mapped out the flow of an individual's development. We also did a "reality check" with a designer and an engineer who had less than five

Team	Description of Role	Issues to be Managed
Strategic Steering Committee	Ensure the direction of the project is in sync with corporate goals	Lend their support to the project principles; but don't have a full understanding of the deliverables.
Working Steering Committee	Review key outputs of project. Provide resources.	Large, diverse team with many expectations due to number of areas impacted by project.
Analysis/Design Team	Provide real-world perspective on current job performance and future expectations.	This team's input is not always in line with the Steering Committees' direction.
Training Work Team	Provide effective, workable solutions to address the change in expected performance.	Can only craft optimal solutions with considerable input from the affected parties.
Education Work Team	Provide certificate and degree programs that prepare designing engineers to begin their new role.	Need to work with Training Work Team to create a total package for the customer.

(Continued from page 14)

years experience. We requested that they complete an Individual Development Plan with their supervisors to ensure we were providing development opportunities that the target audience needed. Finally, we met with those identifying the education and certification requirements for the program to refine interface points and resolve areas of overlap.

Implementation

The Steering Committees decided to delay prioritizing and developing the gap Training & Development Events until data has been collected from the pilots. We expect this to take less than two hours once the pilots are complete.

Currently, we are identifying training and development needs to prepare the newly formed Pilot Teams for their roles on the programs. We also plan to gather additional performance data during the pilots that can be used to create structure for the developmental job assignments.

Future Opportunities

Mentoring Development. Because there are no designing engineers in the corporation today, finding adequate mentors will be a challenge. This effort will probably require creating some developmental Events for those interested in filling this role. It may start with a selection tool to identify suitable candidates and include an orientation to the job of mentoring as well as the overview to the designing engineer role that is on the existing Path.

Qualification and Certification Instruments. Now that the formal requirements are in place by the educational institutions and accreditation boards, interest is being expressed in helping employees ensure they are ready to pass the tests. Development of a designing engineer preparation course similar to those on the market for the GRE has already been suggested. This might entail an in-depth study of selected topics and the administration of a certification instrument which could provide an indicator of whether an individual is prepared to register for the official examination.

Qualification instruments could easily supplement the job assignments we specified. They should fit nicely into the existing structure since the jobs on which the designing engineer could become qualified to perform were already grouped into logical chunks. In addition, plans are being made to provide the designing engineer with a technical coach and this person would be a good choice to administer the qualification instrument.

Human Resources Integration. We need to work closely with human resources representatives to

▸ Align the entrance requirements for new hires with the Training & Development Path(s).
▸ Create assessment tools for candidate selection based on the appropriate combination of education, training, and job experience.
▸ Suggest changes in compensation systems to reward designing engineers for superior performance based on the expectations set forth in the program.

In Retrospect

This project took almost two years, but only a small portion of time was spent on actual curriculum architecture work. Most of the time was used by customer teams to gain internal, grass roots support and to obtain backing for a common approach among all the divisions. The point is not that we needed to hurry things along. On the contrary, we did the right thing for the customer by waiting for a large organization to gain enough momentum to back the project. True change takes a painfully long time in today's mammoth companies and we could see that a forceful mandate

The analysis data was so good that the steering team used it for creating career paths to support the new job.

	Designer	Engineer	Designer and Engineer	Total
Current	18	53	20	91
Future Designing Engineer	12	28	15	55
Designer and Engineer Tasks	4	22	3	29
Other groups*	2	3	2	7

* Materials, Analysis, Mass Specifications, Detail Designer, Validation Group, Dimensional Engineering

In the PACT Analysis, Master Performers were able to categorize the 91 tasks performed by designers and engineers. These were then redistributed to improve efficiency.

Not Just Anyone Will Do (continued)

the enterprise at-large and its departmental or functional interests (such as engineering, marketing and sales, manufacturing, service, administration, etc.).

To some extent, the Governance Board and Advisory Councils are part of a "command and control structure" that empowers the T&D organization.

Other sets of teams participate in T&D projects sanctioned by the Advisory Councils. These can include

‣ Project Steering Team
‣ Analysis Team
‣ Design Team
‣ Development Team
‣ Pilot-test Deployment Team
‣ ISD Team

All of these teams are highly important to producing the right outcomes. They are goal-oriented. Their responsibilities are clear and their outcomes are well-defined. Because they are called from the organization at large to help steer and/or design T&D activities, they exist only until a specific project is completed. They "do their work and then go back to work."

The most important team in a PACT project is the Project Steering Team.

Arguably the most important team in a PACT project is the Project Steering Team. This makes the first step in any PACT Process—recruiting, organizing, and communicating with the Project Steering Team—a critical step. To put it another way, it's difficult to produce first-quality training with a second-string team.

Picking the Players

The Project Steering Team sanctions the project and outcomes and chooses members for other project teams. Its members are the key people in the organization who have a stake in the project's outcomes. They have a bias for getting results and who will hold your ISD feet to the fire. The goal is not to get the company CEO on the project, but to get other people with the right authority levels and interests—those with authority to prioritize and then provide dollars and people for the project. If they are selected carefully, expect them to ask tough, but important, questions about the outputs of the Analysis and Design Teams they choose.

CAD Project Offers 360 to 1 ROI (continued)

from the top would not result in the long-term solution they sought. The challenge for us was to stay engaged and at the top of our game when the Steering Committee was ready to move on to the next step in the process.
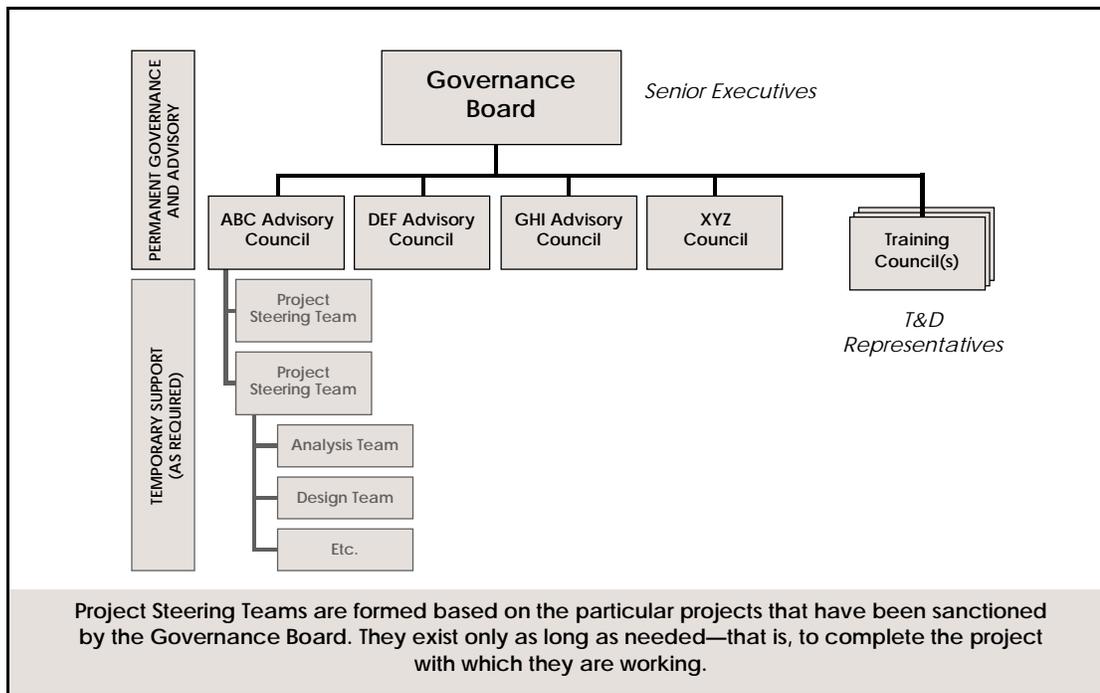

Kim Peterson has used PACT Processes since 1996.

To gain additional buy-in for the project, we conducted several data reviews with additional management representatives. The executives in these small group settings had not been involved in the project planning or even the selection of the Analysis/Design Team members. But when they saw the data they became advocates—due, in large part, to the fact that we had accurate data from our team. The data reflected major performance gaps the organization was seeing at all levels. It was just detailed enough that those not in the sessions could relate to it without getting bogged down. Later, when the Steering Committee was grappling with creating career paths to support the new job, it decided to go back to our analysis data as the baseline for its decisions.

This project has been rewarding for the teams and will produce excellent results by simplifying the way the design and engineering processes are done. And with a 360 to 1 return on investment, the shareholders will be happy, too. ▶▶▶▶

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PERMANENT GOVERNANCE AND ADVISORY

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                    │   Governance    │        Senior Executives
                    │      Board      │
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  │ Advisory  ││ Advisory ││ Advisory ││ Council ││  Council(s)  │
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TEMPORARY SUPPORT (AS REQUIRED)
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Project Steering Teams are formed based on the particular projects that have been sanctioned by the Governance Board. They exist only as long as needed—that is, to complete the project with which they are working.

Establishing a formal Project Steering Team ensures that key stakeholders "buy-in" to the project.

(Continued from page 16)

It's a good idea when picking the Project Steering Team to consider who might come forward sometime during the course of the project and question or take exception to what is happening. It would be better to invite them on day one to have their say and allow them to attempt to influence the Project Steering Teams rather than to have them join two months into the project when many key decisions have already been made.

Establishing a formal Project Steering Team ensures that key stakeholders "buy-in" to the project politically. They make sure the project makes business sense and that it will be supported during the project, and that the outputs/outcomes/results will be supported after the project.

Our 19 years of experience with Project Steering Teams has shown that the project is much more likely to be successful if the Project Steering Team is carefully selected and actively participates in the project. ▸▸▸▸

The Core Systems and Processes for T&D *(continued)*

(Continued from page 6)

call a Curriculum Architecture Design or a map of training needed by the job(s) that have been studied.

In CAD Phase 4, we plan how this will be implemented in the organization.

Product and Service Line Development. So far, we have a map and some specifications—a plan for a product, but no real product. The challenge is to turn designs into actual courseware—training and development,

T&D. There are usually three ways of doing this.

▸ Build new, custom training from the ground up using internal or external sources
▸ Buy off-the-shelf training from providers and use these as-is or modify them
▸ Modify existing products and services to meet performance requirements

To do this requires five processes.

▸ Development/Acquisition Program Management
▸ T&D Custom Development
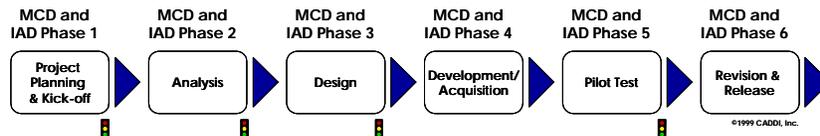▸ T&D Purchased Product Acquisition

(Continued from page 17)

‣ T&D Purchased Product Modification
‣ Existing T&D Maintenance

The CADDI specific processes for Product and Service Line Development are

‣ Modular Curriculum Development (MCD)
‣ Instructional Activity Development (IAD)

Both are rigorous but flexible (within reason) processes. They include formal plans, formal analysis and design steps, development/acquisition, scheduled reviews, and pilot testing.

MCD and IAD processes involve customers at nearly every step because, like CAD projects, MCD and IAD projects are customer-sanctioned—blessed by customers who are stakeholders in the outcomes.

> *T&D doesn't exist for the sake of T&D.*

MCD and IAD Phase 1	MCD and IAD Phase 2	MCD and IAD Phase 3	MCD and IAD Phase 4	MCD and IAD Phase 5	MCD and IAD Phase 6
Project Planning & Kick-off	Analysis	Design	Development/Acquisition	Pilot Test	Revision & Release

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MCD projects take general specs for a learning Event, drill down several levels, and produce detailed designs for training that are ultimately developed into T&D. Because customers are involved in this process, they are not surprised by the design because they "own" it. We like to think of it this way: we own the process but our customers own the content and design. These designs, or "blueprints," are then turned over to developers who create T&D.

The IAD process generates instructional activities such as informational content; knowledge and performance tests; simulation exercises; performance aids; and electronic or paper desk procedures.

Once they're developed, MCD and IAD products are pilot tested with "real learners" in an environment that's similar to the actual deployment platform. In others words, if the learning Event is group-paced, that's how we pilot test it. Our goal is to see if it works in the real world.

Both MCD and IAD address the tremendous pressure that the real business world puts (or should put) on T&D: to reduce costs and increase cost efficiency *of the enterprise*. This isn't about making the T&D process efficient, it's about T&D processes that are efficiently producing better performance in the organization. This means spending the limited capital resources entrusted to T&D (people, facilities, equipment, materials, and budgets) in ways that produce organizational results. T&D doesn't exist for the sake of T&D.

These issues are not unique to T&D products. Many companies have addressed problems and opportunities to reduce costs by using common processes and systems, tools, and techniques. The auto industry faced this need back in the late 1970s and 80s. They changed their production and operations methods based on a theory of commonization of processes and systems.

Enterprise-wide Resource Planning (ERP) systems intend to capitalize on this capability and will facilitate the capture, storage, reporting, and retrieval needs of almost everyone in the organization. Knowledge Management systems use this data to better facilitate organizational development as well as increase revenues and reduce costs, improve current operations, or meet the challenge of a new opportunity.

Product and Service Line Deployment. Once T&D is designed and developed, it must be delivered to benefit the learners and the organization. This can be done in one or more ways.

‣ Traditional and non-traditional instructor-led, group-paced classroom deliveries
‣ Self-paced activities including readings and computer-based delivery
‣ Structured, coached delivery
‣ Unstructured, coached delivery

The Product and Service Line Deployment System literally connects learners with the learning Event—and all that entails. There are seven processes within the system.

‣ T&D Master Materials Storage and Retrieval
‣ T&D Master Materials Change Management
‣ T&D Scheduling
‣ T&D Facilitator and Coach Development and Certification
‣ Facilitator-led T&D Deployment
‣ Self-paced T&D Deployment
‣ Coached/Mentored T&D Deployment

This requires administrative systems to schedule training and instructors, enroll learners, deliver the

The Core Systems and Processes for T&D *(continued)*

(Continued from page 18)

Event, track attendance, track the results of testing, maintain certification and requalification records, and monitor performance. This is the most administratively repetitive part of the T&D system. It doesn't (or can't) exist within a vacuum. For example, all the delivery methods or media that can be realistically used within the enterprise and for the target audiences need to be considered when making packaging decisions that are part of the Product and Service Line Design System at 5 o'clock.

Positions five through seven on the clockface are the core processes of any T&D organization. CADDI's PACT Processes for T&D fit here at 5 and 6 o'clock. You may call them something different than we do but the point is that T&D design, development, and deployment exist in some form in every organization.

In our next newsletter, we'll cover the Support Systems for T&D. ▶▶▶▶

Super Area of Performance: Leadership *(continued)*

(Continued from page 8)

Within the CADDI view of the Leadership Super AoP are the enterprise's outputs, inputs, and tasks for developing and managing business strategies; directing, monitoring, and troubleshooting operations; directing process improvement activities; and conducting overall enterprise communications. Other performance requirements of the enterprise's leaders and managers are found in the other Super AoPs, which will be described in detail in future issues of *lean-* **ISD**, as well as in a future CADDI book on "PACT Analysis."

Our model uses the following generic AoPs within the Super AoP of Leadership. These will need to be adapted versus adopted to fit the business needs of your enterprise.

▸ Strategic Planning and Management
▸ Operational (Tactical) Planning and Management
▸ Results Measurement
▸ Process Improvement Planning and Management
▸ Communications Planning and Management

One can argue that these could have been named something other than "leadership" AoPs—perhaps because the term *leadership* has such a

AoPs within the Leadership Super AoP	Typical AoP Outputs (Not all inclusive)
Strategic Planning and Management	Business goals and targets; competitive analyses; SWOT analyses: business strategies/goals and assignments; etc.
Operations Planning and Management	Long-, medium-, and short-term tactical goals and plans to achieve the strategies and run the daily operations; resource analyses and plans and budgets; daily work schedules, etc.
Results Measurement	Actual to plan analyses; progress toward goals analyses; decisions on maintaining the plan or changing/updating; targets for improvement; etc.
Process Improvement Planning and Management	Process Performance Improvement (Quality) targets and plans; metrics for the targeted improvement; customer feedback response plans and assignments; etc.
Communications Planning and Management	Routine and non-routine communications goals, themes, channels and plans; assignments; etc.

Our model for AoPs needs to be adapted versus adopted to fit the business needs of your enterprise.

wide range of meanings. It is our position that people who are in management, supervisory, or "lead" roles almost always have roles in the planning and management of the business operations in both the short and long terms. Those who are in CEO roles do this differently (performing different tasks and using different styles and traits)

Super Area of Performance: Leadership *(continued)*

(Continued from page 19)

than those supervisors and leads "in the trenches." But these AoPs are common to all regardless of level or position in the organization. Who, at what level, does exactly what tasks, can now be modeled and shown how they really connect or are really disconnected.

If the goal is to ensure worthy performance from those in management positions, then the goal of management training must be to help managers perform. In the area of leadership training, this often leads to the debate of whether you can train people to be leaders. Are leaders *born* with the capability or is it *nurtured* into them? Or is it a little of both?

Leadership Simulations

We believe that performance-based T&D can help nurture leader-like capabilities in the right people. Through the use of simulations, properly designed T&D Events can place managers or managers-in-training into situations in which they can try new, sometimes scary behaviors and then see the consequences. It's more than just "getting a feel" for being a leader—that's far too "touchy-feely" for performance-based training.

Properly designed simulations are based on real performance requirements and actually test the

learners' skill at applying what they have learned. Notice we didn't stop at testing the learners' knowledge, we stop at *doing* something: there's a dramatic difference between a knowledge-based pencil and paper test and a performance-based simulation exercise!

Performance First

Companies often look at leadership through the lens of a competency model that describes certain enabling traits and characteristics, rather than through a performance requirements model that describes the outputs desired and the required tasks. Without this performance orientation, a company's management training becomes mired in low-value, "touchy-feely" classes that don't change actual performance. As we often say, "What you *know* and *your natural style* is important, but what you *do* and *how you do it* is what gets results."

When we analyze the leadership component of managerial performance, CADDI's focus is always on an organized view of performance *first*, and then on the enabling knowledge, skills, attributes, and values of the performers *second*. The PACT Processes and our Super AoP framework should help you do so as well. ▶▶▶▶
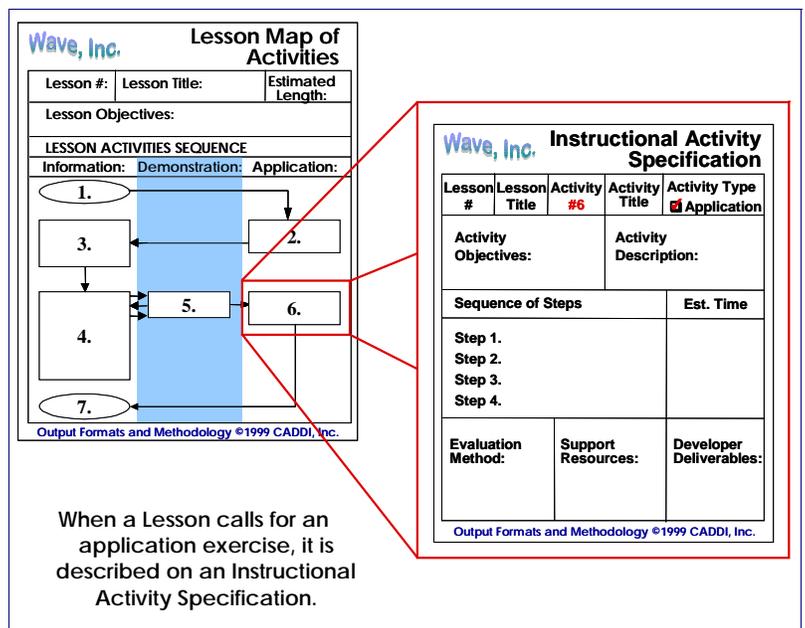
> *The Leadership AoPs are common to all regardless of the level or position in the organization.*

Involved Learners Learn Better *(continued)*

(Continued from page 10)

It is clear from this performance analysis that the training needs to have a distinct *performance* orientation. In other words, new employees will be required to *do* certain activities using knowledge and skill developed during the training. According to theory, the more we can involve the learner in this process (through the use of more than just a single sense) the more effective the training will be.

When a Lesson calls for an application exercise, it is described on an Instructional Activity Specification.

In the **Design Phase**, we start by spec'ing out T&D Modules and then building T&D Events by combining modules that will enable learners to perform on the job. (Modules and Events are usually spec'ed out during a previously conducted Curriculum Architecture Design (CAD.) Then, individual lessons are mapped out, designed, and structured based on the Module Specs/Event Specs and input from master performers. The question to be considered during the Design Phase is, "What are the most effective ways to convey these concepts?"

In the context of designing multisensory training, the primary design tools are the Lesson Maps of Activities and the Instructional Activity Specifications.

The **Lesson Map of Activities** is one of the MCD designer's two primary tools. It not only maps the flow of instructional activities within the lesson, it also identifies the type of instructional activity and its estimated length/duration (in terms of minutes or pages).

‣ *Information-based activities* simply convey facts, concepts, philosophies, etc. They can stand alone or be partnered with other types of activities. These activities provide training at an awareness or knowledge level.

‣ *Demonstration-based activities* illustrate or walk through real or simulated performance and/or the outputs of that performance. This type of activity generally follows an information-based activity and can help learners develop awareness, knowledge, and, in rare cases, skill.

‣ *Application-based activities* give learners an opportunity to practice and demonstrate what they've learned by applying it. This type of activity can take many forms, such as paper and pencil tests, simulations, real work, team exercises, etc. Application-based activities are generally used where skill development is needed.

As a tool, the Lesson Map of Activities works in any learning environment and deployment platform and can be used to design self-paced; group-paced; or structured, on-the-job training—from conventional classroom to multimedia simulations. It can be used to design mono- and multisensory lessons.

Lesson Map of Activities

Instructional Activity Specification
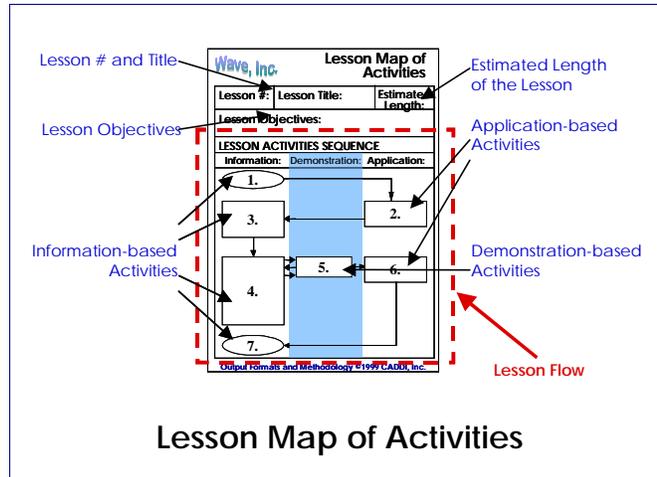
The Lesson Map of Activities is one of the MCD designer's two primary tools.
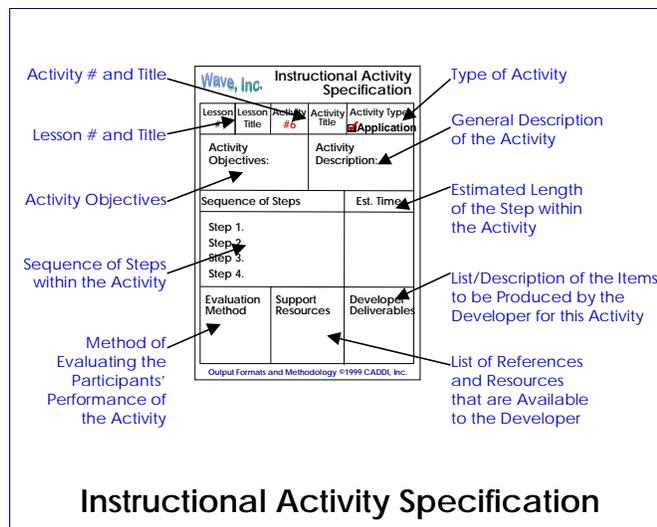
Generally, information-type activities can effectively appeal to a single sense (*vision*, in the case of a self-paced reading) or to more than one sense (*vision* and *hearing*, in the case of classroom-delivered lecturettes or video clips). The same can be said for demonstration activities. But because they involve the learners in some physical way, application-type activities always involve the use of more than one or two senses. For example, in an application-type activity, participants may be required to read instructions *(vision)*, physically handle equipment to diagnose a malfunction *(vision, touch,* perhaps *hearing,* and even *smell)*, interact with others in some sort of simulation *(vision, hearing,* and *speech)*, and write a brief report *(vision* and *touch)*.

The other primary tool for designers is the **Instructional Activity Specification**. The designer uses this tool to provide a great deal of

A Concern for Competence

by Guy W. Wallace

When CADDI partner Guy Wallace and his wife Margaret flew to Hawaii recently, neither realized their vacation would turn into a potentially life-threatening situation. In this first person account of his accident, Guy reflects on a theme that's been part of his T&D life for years: *human competence.*

Readers will be glad to know that Guy has made a speedy recovery from his injury and is back on the job, controlling where the logo goes on the letterhead!

Thursday, February 10

I just got back from a February vacation in Hawaii—a day early. I hate when that happens. Just had to cut it short.

I spent most of my vacation being very concerned with competence—human competence. I was also concerned with the competence of the environmental assets with which humans interact. I was seriously concerned. It was, at times, a matter of life and death. I hate when that happens, too. Vacations shouldn't be so seriously concerned with competence.

We planned our early February warm weather trip to have some fun in the surf and sun…as opposed to a cold weather trip to ski in the snow of the Rockies. This early February trip coincided with our anniversary, Margaret's birthday, Valentine's Day, and some typically very cold Chicago weather. Surf and sun usually win out in heavily weather-weighted decision criteria. At least they did this last time.

Off to a Bad Start

The trip began with a competence issue. The travel agent screwed up (a technical term) the original plans by not asking for a deposit on time and by not using the credit card account numbers already in the system. As a result, flight plans had to be changed and I wasn't happy. There were other little things that were not quite right. Hence my concern with incompetence.

With the recent air disasters, I was concerned about fleet maintenance competence, pilot training and testing competence, and I can't forget the baggage handlers. Then, the car rental counter staff. Many vacations have gone very poorly when these areas of competence are at issue.

Margaret and I spent the first two days in beautiful Honolulu right on Waikiki Beach. After the long flight from Chicago, the sun and sounds of the pounding surf were very relaxing. After three

Involved Learners Learn Better (continued)

practical information for the developer. The Instructional Activity Spec

‣ Describes the activity and its objectives.
‣ Lists the sequence of steps (in the case of a demonstration- or application-based activity) or content (in the case of an information-based activity) within the activity, as well as the estimated length of each step/chunk of content.
‣ States the method by which the participant's performance during the activity will be evaluated.
‣ Identifies the resources the participant needs to help him/her complete the tasks in the activity.
‣ Lists the deliverables the developer needs to create to support the activity (e.g., case study materials, quizzes and answer keys, overhead transparencies, etc.).

Just like the Lesson Map of Activities, the Instructional Activity Specification is a useful tool regardless of the chosen learning environment or deployment methodology. Its power is in its use as a means of communicating the specifics of the design to the developer.

Keeping in mind the chosen deployment methodology, the required depth of learning (awareness, knowledge, or skill), the complexity of the content, and the target audience demographics, we ISD practitioners should incorporate multisensory learning whenever possible and practical. Using multisensory learning techniques helps ensure the transfer to on-the-job performance. ▸▸▸▸

years of Navy life back in the mid 1970s, I just can't go to that state without stopping by the Arizona Memorial to pay my respects. No one should. It is sobering experience. I thought of the competence of the U.S. sailors, soldiers, and marines stationed at or near Pearl Harbor in December 1942. I also thought of the competence of the decorated heroes from across racial boundaries, even way back then.

Then, I was concerned with the competence of the serving staff and chef preparing my shellfish meal at the oceanside outdoor restaurant as we toured Oahu for the day. Hoping for competence.

On day four we flew to Maui, where we were to spend another seven days at a very nice resort. More pilot and maintenance competency being personally tested here by the tourists. And, then we personally tested limo-driver competence, followed by front desk, bell services, and finally room services competence.

Looking for Competence

The next two days on Maui were spent relaxing on the beach, catching some rays and planning "what will we do with our limited time without running ourselves ragged?" We saw the whales playing at sea from our villa window and again from the beach lying under the umbrellas, sipping from cups embellished with little umbrellas and fruit. "Bartender competency tests complete. Care for another?" Margaret smiled.

We planned a helicopter ride (with video) of the entire island. Would the pilot be competent? What about their maintenance crew and their suppliers? Is the snack food okay?

We planned a snorkeling trip. How competent is that crew in life saving and emergency procedures, in teaching snorkeling techniques, and in driving the boat?

We planned a drive to Hana that would take us over 56 one-lane bridges and a night luau at Lanai. My driving competency would be tested as well as Margaret's patience.

We gladly left off golf, diving, horseback riding on the beach or in the mountains, tennis, sailing, and dinner cruises from the competencies we would test. Enough is enough. Otherwise we were going to need a vacation from our vacation. Sadly, there wasn't enough time. After these two days of carefree planning with pure relaxation, we were ready to explore paradise at a relaxed pace.

Sunday, February 4

Just before returning to our villa on Sunday afternoon, Margaret and I walked into the water to splash around. A big wave came up and as it passed, I dove into it back toward the shoreline. I was going to body surf back to the shoreline just as I had watched dozens of competent kids and grownups do all afternoon.

The signs along the beach walkway had said to never turn your back to the ocean. Many signs. Many warnings. I did not competently understand their true meaning. It turned out that I was incompetent.

As I dove into it, the wave hit me high and the undertow hit me low. Remember the cartoons of characters being tossed in a washing machine? They spinned and tumbled. So did I.

I immediately lost all feelings in my arms after my head hit the ocean floor. They hung limply by my sides, floating listlessly, all akimbo in the aftermath of my spinning and tumbling cycle. My eyes opened despite the salt water. My mind raced. Which way was up? Which way to shore? Was I going to drown? The undertow was powerful, it could take me out to sea. In a weird, slow-motion speed my thoughts flashed to the controversial Super Bowl commercial of Christopher Reeve getting up from his wheelchair and walking.

I was scared. Very scared. Why did I flash on that? This can't be good. A diving experience came to me and told me to slow my breathing down, way down. I did. Competently.

My arms were useless. I could not motion with them and push myself around. All I had going for me were my legs. They were off the ocean floor but sinking down and would soon touch. I understood the potential of the undertow to carry me away from shore and back out to sea and the need to get planted and then push with my feet. But I needed to get oriented and directed back to shore. Which way to the shore? Which way out to sea? When will my feet make contact?

When they did I pushed myself ahead in the direction I was already facing. I couldn't turn around

easily. My arms floated up and down at my sides with the action of the waves. I could see the surface of the water above me, it was a foot or two away. I watched silently as the surface steadily lowered itself to meet my waiting face with each step I took. The top of my head broke through first as I steadily pushed myself forward with my feet. My arms hurt. Pain shot up and down. It felt like a giant charlie-horse.

When I broke the surface, my scream for help was only a whimper. Margaret heard it but didn't sense an emergency. Luckily, Margaret was looking for me when I didn't come up right away. She approached me as another wave rolled over me. I said, "My arm."

She wasn't sure what I was saying or asking for. Another wave rolled over me and when it subsided I again said, "I'm hurt, pull me out. Help."

She gingerly grabbed my arm and started to help me out, but now she was afraid to hurt my arm. I was still speaking quietly, and softly. It wasn't the hysterical scream I was attempting. I just didn't have the energy. What I wanted, of course, was for her to grab my arm, yank me directly out of the water, drag my wet body onto the beach, cover me with a million warm blankets, and then make the pain go away. And to do it quickly. Very quickly.

Someone else ran up, grabbed the other arm, and helped walk me onto the beach where they laid me down. They laid me on the sand. It was the beginning of a long, serious, chain of competences, and I was not a drill. I was a real test with serious consequences.

A few moments passed.

Official Nurse Questions

I was looking up into the upside-down face of a woman who claimed to be a nurse. She asked me a bunch of official nurse questions. Nothing stupid. I told her that my arms were on fire, pain shooting up and down each one. I was cold, shivering. She told me to lie very still as she cradled my head in her hands and held me very tightly. She explained what was going on and explained why I could be feeling what I was feeling. Very competent.

There was talk going on around me—I needed to be moved because the waves were coming up. They talked about putting me on a board and getting my head stabilized, getting more blankets, and calling the security staff and the ambulance.

The talk continued. Much of it sounded very competent to me as I lay there on the beach. Someone sounded like they knew what they were talking about. The nurse insisted that no one was going to move me. Competence with a bark.

A man appeared in my view. He started poking me and asking questions. Familiar questions. A doctor from the Mayo clinic. Again sounds good, sounds competent!

I did whatever he told me to do. My competent nurse and my doctor were going to make it all better. I was going to be a very good boy. I was going to be a very competent patient! Whatever they wanted was theirs. Their wish my command.

Oh the pain! My hands! My arms! And I was freezing. I probably wasn't going to die, but I knew I could be seriously messed up: messed up already or messed up later, depending on how we collectively handled it from here on out. Competently or incompetently.

They rolled me carefully and placed a board under me. Then they braced my head in some sort of restraint. When I tried to help in the roll the nurse ordered me to stop helping and to relax. I relaxed. I could and would do whatever she told me to because I was scared. Very scared.

I was scared that I was going to paralyze myself by doing something stupid. I was scared that someone else's stupid mistake would paralyze me. I was scared that I would never be the same again. "*I am a control freak and I am out of control here,*" I thought. This isn't just some control freak freaking out over where the logo gets positioned on the letterhead. This is my spinal cord that we are messing with! Let's be so competent that someone is going to want to write this one up and give everyone medals to everyone later for being *so competent.*

Lucky me that the resort had a function going on and that there seemed to be dozens of people, including some doctors on the beach. I either ruined their party plans, or got their juices flowing before their beach bash. Sorry if I ruined your party, guys.

A Concern for Competence (continued)

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I was being attended to by not just one, but by two competent people. Let's face it: absolutely no one gets to be a nurse without jumping through a whole bunch of complicated, serious, perform-ance-based education and training and certifica-tion "hoops." And we all know what doctors have to go through, even though we don't really have a clue about the specifics. But we know it's a lot. And it's damn serious. And then we trust them to be competent.

No One-Minute Doctoring Training

Their training and education and certification processes are real, no phony-baloney, fad-junk that all too often pervades my own industry. I am a training and development consultant. I under-stand the difference between performance compe-tence and butts-in-seats attendance. I've seen some really bad foo foo.

But, not for these guys. No one-minute doctoring manuals were used in their development showing that being competent is as easy as 1-2-3 or A-B-C. Let's spend 60 seconds here discussing spinal cord injuries and what to do if it happens on the beach. Next week, we'll cover what to do if it happens in your own backyard. It'll only take a minute.

The security staff guy leaned into my view and asked me some questions. Then the fire depart-

ment guy asked a lot of questions. They were the same questions I'd answered twice or three times already, but I thought it would be good to play along. Humor them. Maybe they're trying to see if I keep my story straight. Maybe this is a test of *my* competence.

A buzz started that the ambulance was here. More uniforms appeared in my peripheral vision. My nurse disappeared. My doctor told me what was going to happen next. I was cold, shivering, and beginning to lose touch with the details of what was going on. But it was OK. I could relax.

They picked up my board, set it back down on the ambulance gurney, and wheeled me up the side-walk to the waiting ambulance. There are some things that I forget now about that jaunt. Some-where in there I was getting stuck with needles, and thankfully, there are things I am fuzzy on. The pain was there but the edge was off. Way competent, dudes!

I spoke toward the face hovering over me as the ambulance carefully traversed the parking lot and exited the resort grounds. I was going to ask, how much longer as a joke, but seriously, "How much longer?" About 30 minutes was the reply.

During the ride to the hospital, the ambulance EMT was busy being competent in things EMTs need be competent. Radio calls were made, forms

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Do You Have a T&D Story to Share?

We are always interested (and we hope our readers are, as well) in the applications and les-sons 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 to other practitioners via our *lean*-**ISD** newsletter and/or our Web site.

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 per-haps you've learned important lessons in plan-ning, managing, or conducting your projects.

Send your submissions to our offices at CADDI@caddi.com 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 nec-essary). We will send you a release form when we receive your submission. Please be sure to include enough background so that our read-ers can understand your business and require-ments. 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. ▶▶▶▶

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gathered and completed, and questions asked. She asked me familiar questions and wrote down the answers. The same questions over again. This must be good. Those must be good questions because everyone finds it useful to ask them. The same ones. They're all well trained, they ask the very same questions. But still, it seems somewhat inefficient, and irritating.

Process Improvement

Maybe if we all got together tonight, after the quick look over in ER and they patch me up and send me back to the villa, we can compare notes and develop a process map of both the current- and future-states and show how we can streamline this little operation so that no one has to waste their time asking the same questions over and over again.

Maybe if you all got palmtops (not the fronds, the handheld data devices), you could wirelessly transfer data using infrared at each handoff just as you each handed me off. Then, all of the right questions could be answered once and sent on ahead, and you could shoot me up with something just to let me sleep my way into and all the way through this little escapade. And, when I wake I'll feel all better. But keeping me up just to ask me the same darn questions over and over again is making me tired and cranky.

Hey, maybe I am getting a little tired and cranky here. I'm freezing and all my blankets are all wet. My suit is wet and full of sand, and my tailbone is being crushed because I'm not moving it one bit off the spot it is jamming itself into, because I'm afraid.

Afraid to straighten out my back in the slightest and move one millimeter off this hard board. My head hurts too, where it is digging itself into the board. And I'm afraid to lift my head off that spot. And then again, the pain in my arms is still killing me, so to speak. But I'll be alright. I can take it. Again I ask, "How much longer?" Ten minutes is the answer.

"You're an EMT right? What kind of training and certification are required?" I inquired. Got to keep myself busy. Got to keep distracted. Oh look, another example of serious competence through serious T&D&C. That long huh? That's great. Oh,

and continuous education, too. That's nice. How much longer please? Oh.

Excuse me. I've got these sharp pains running up and down my arms. Actually, now it's only from the elbows down and doesn't include the little and ring fingers of either hand. Ah! Progress so soon, Mr. Wallace. Everything is going to be A-OK. Just a few more minutes now.

I'm feeling continuous waves of tingles, a million funny bone whacks, up and down my arms. And feeling droopy…feeling tired…sleepy. I watch the blue skies and green trees up through the window in between flashes of glare. More turns now and we slow to a halt.

The back door opens. The gurney is being pulled out and I both hear and feel the gurney legs and wheels pop back into joint as I am lowered to the ground. We wheel away. Palm fronds and blue skies are my straight up view. Hawaii is so beautiful from any angle.

Then the blue skies turned abruptly into ceiling, white ceiling with dirty cable runs and then a doorway. Then in the entranceway, decorations of some sort were visible from my straight up view. My head wasn't going to turn itself in any direction other than straight up for anything. *Eyes ahead* we called it in the Navy. I could do that.

Just Like the Movies

The ER was just like in the movies and TV. People rushed up and asked me questions, the very same questions as I had been asked before. I patiently answered them because I knew the answers were important, because the questions were important as a means to the end of getting the answers. We weren't playing games here.

But now my doctor approaches. "Hi, I'm Mark," and he's yelling to others about CAT Scans and x-rays, and he wants it now! Others are plugging me with hypodermic needles and others are plugging me into medical equipment. And if he's got to operate now he wants to know it now. *Now.* He leans into me as we rush down a hallway, "Mr. Wallace, how are you doing?" he asks. "Here's what we're going to do…"

It was two nights and three days of a lot of round-the-clock competence. Complicated competence. Technical and interpersonal competence.

(Continued from page 26)

Things happened as they told me they would. The shifts in the locations and severity of my pains were predicted and realized. The schedule of staff and services (including those pain shots every two hours) was performed just as they had explained. My helpers were professional, caring, and competent. I have no complaints, only praise for my hosts during my unplanned stay.

Thank you for being so competent.

I'm at home now. Just trying to get all the tingles out of my system as I type at the keyboard. Taking a lot of hot baths. And a lot of pills. We see the local doctor, a specialist, tomorrow. More doctors and nurses. I am feeling better, much better. Coming down off the drugs is nasty. That, too, was predicted.

I can now see a complete recovery ahead for myself. I am both older and wiser, I'm sure. I hope. This too shall pass. I will read the signs much more carefully, much more competently.

Oh, the pain—it is still with me. And the competence—it's still back there waiting for the next victim of the undertow.

Human competence. I'm especially concerned with that today. And, thankful for it, too. ▶▶▶▶

Oops, We Made a "Misteak"

When we looked at our *Enterprise Systems View* model published in the Winter 1999-2000 newsletter, we noticed a mistake (or was it a misteak?) The Human Asset Requirement AoPs were incorrectly listed as Knowledge/Skill Requirements and Attributes and Values. We've mended our ways and are reprinting the Super AoP correctly.
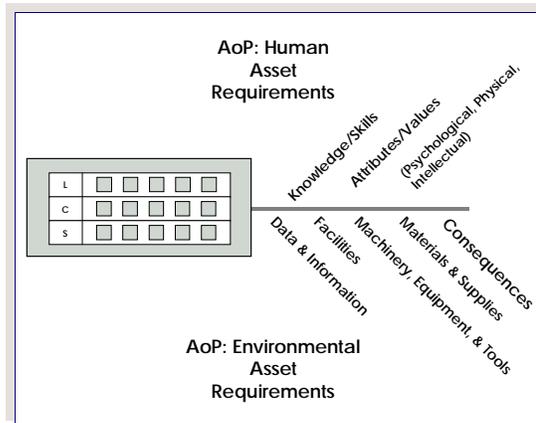
Super AoP: Planning and Managing Human and Environmental Assets.

The two Planning and Managing Human Asset Requirements and Environmental Asset Requirements AoPs define and acquire people and environmental assets and then manage these within a system or process. The Human Asset Requirement AoPs are the planning and management of

▸ Organization Design
▸ Recruiting and Selecting
▸ T&D
▸ Performance Management/Performance Appraisal
▸ Compensation Administration
▸ Rewards and Recognition

The Environmental Asset Requirements AoPs are the planning and management of

▸ Data/Information Requirements
▸ Facilities/Grounds Requirements
▸ Tools/Equipment/Machinery Requirements
▸ Materials/Supplies Requirements
▸ Financial Asset Requirements
▸ Balance-of-Consequence Requirements

AoP: Human Asset Requirements — Knowledge/Skills, Attributes/Values, (Psychological, Physical, Intellectual), Consequences, Materials & Supplies, Machinery, Equipment, & Tools, Facilities, Data & Information — AoP: Environmental Asset Requirements

And the Winners Are

In our Fall 1999 newsletter, we invited you to vote for your favorite version of the *lean-ISD* book cover. Congratulations to the following folks who were selected at random to receive a complimentary copy of Guy's book.

▸ Jim Russell, Purdue University
▸ Gerry Kaufhold, Teams Work Enterprises
▸ Amy Scrima, Western Michigan University graduate student
▸ Barb Koch, Raytheon Systems Company
▸ Chuck Seilnacht, Ford Motor Company
▸ Terri Cramer, Eli Lilly and Company
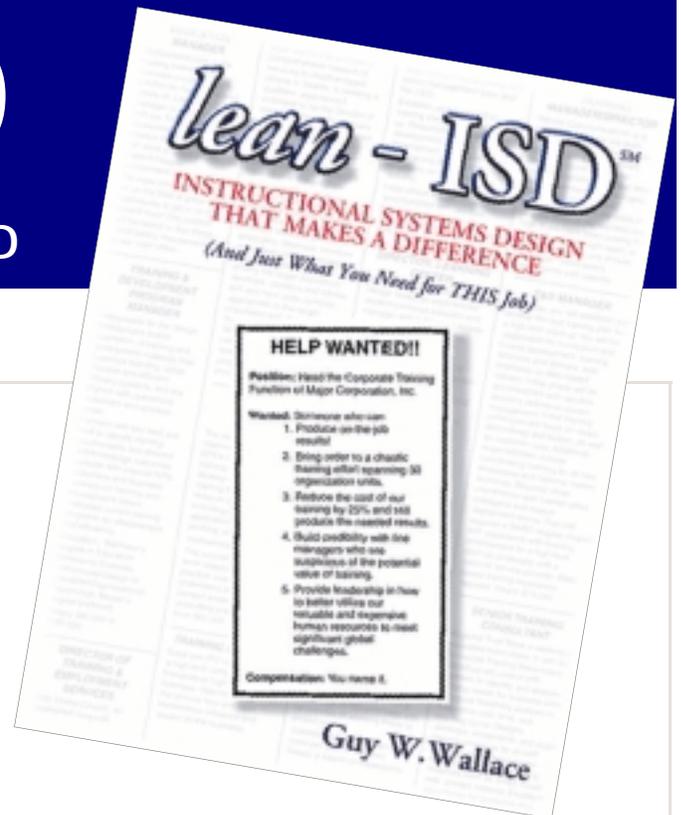▸ Randy Kohout, Fireman's Fund Insurance Company