

White Paper: Training

Don't Overlook Training When Implementing New Technologies and Business Processes

This White Paper, provided by TMW Systems as a courtesy to the trucking industry, examines issues surrounding software/enterprise system training needs and solutions. It also discusses training and its importance in terms of realizing the full value of a company's investment in enterprise systems technology.

An Investment That Pays Off

The ability to realize full value from, and an acceptable return on, investment in the purchase and implementation of information system technology is impacted by many issues. Among the most critical are: 1) Addressing business process improvement challenges in advance of technology investment, 2) Making the correct choice of platform and software solutions, 3) Having a dedicated commitment by company executives for both business process change and the necessary investment in technology and information systems.

Also an essential investment, but something that is often overlooked, is to provide for effective training. Proper and timely instruction can make or break any technology implementation and determine when, and if, the investment in an enterprise solution pays for itself, and continues to pay dividends. For that very reason, transportation organizations are becoming increasingly conscious of the importance of effective training. In a larger sense, companies are coming to more fully appreciate the value of knowledge, the true benefit of the valuable information that enterprise solutions provide.

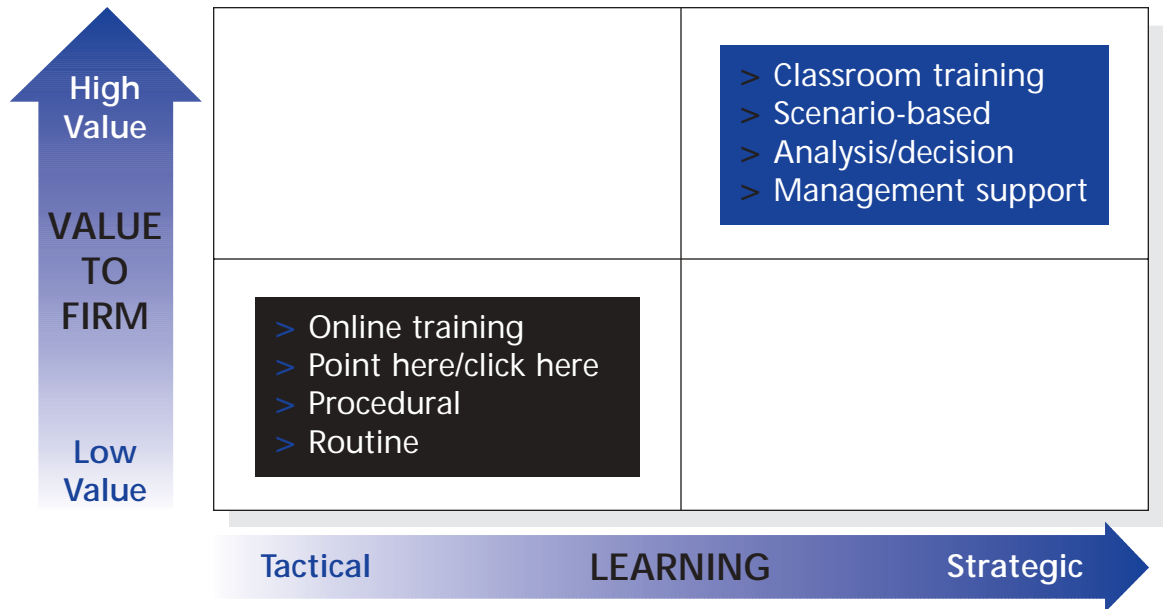
A recurring exercise at all types of transportation operations should be the evaluation of the return on investment for programs and practices. Training on the use of advanced enterprise systems should be viewed in the same way. Some companies may look at the suggested number of training days required with each new installation and try to shortcut this step. Why not? After all, it's an easy way to minimize expense and speed the process. What they don't realize is that this is like buying a new truck and giving it to a driver without his CDL and no insurance. The cost of training should be considered part of the investment. Without a dedicated and effective effort to teach system users, there is no way to realize its full value.

Training Issues

There are a number of issues about training that have come to light recently, not the least of which is the on-going debate about the relative value of online education versus traditional in-person training practices. Along these lines, a somewhat disturbing trend is evident. The misguided notion is that an enterprise system's users can be trained effectively in a predominately online environment – that is, remotely without any person-to-person interaction whatsoever.

Any comparison between online and in-person training is simply not valid; one form of training is not a substitute for the other. Instead, they each have their roles and times when one approach is more appropriate than the other. Online learning, for example, is most appropriate for repetitive tasks while face-to-face education is essential for learning other skills. (The challenges associated with training for an enterprise software application include a broad range of issues. These issues are addressed in more detail later in this White Paper.)

Two types of skills must be taught to gain the full value and functionality of enterprise systems – procedural and conceptual. And a proficiency in both is required.



Procedures include knowing which button to push – which keys are used in an enterprise system to make a driver assignment or dispatch a vehicle. Procedural skills can be learned online, but only after personnel fully understand the concepts behind the decisions they are implementing.

Concepts are about knowing how to make the right driver assignment – which cost and personnel factors have to be taken into account to make the most efficient procedural choices. Concepts, unlike procedures, cannot be taught online. They require human interaction, face-to-face learning in a classroom style environment where discussion can take place.

Calculating ROI

Successful adoption of an enterprise system is no accident. It is the result of a defined strategy and a well-executed plan. That plan must address the various user audiences throughout the organization. Training programs must account for the variety of ways in which the IT staff, operations, management personnel and senior executives use the system.

Truly effective learning strategies target the full value proposition of the software by addressing tactical and organizational learning over the life cycle of the software's use by the firm. The impact of this approach is a faster ROI and more efficient implementation of the business process. Downstream, this could be the difference between earning a break-even point this year or at some unknown point in the future.

Proper training reduces risks, helps retain employees and is essential for providing quality customer service. Unless dedicated and effective training programs are considered part of the investment in any enterprise solution, companies will not realize the full value of their investment. An investment in training, of the right types and mix, is part of the ROI calculation for enterprise solutions.

Expert Advice

Kevin McMahon, a consultant specializing in learning in complex organizational environments, has a particular expertise in learning activities associated with product development, product launch and major software system implementations. He has worked extensively with clients in automotive, technology and financial services. A doctoral candidate at Wayne State University, his research activities focus on learning in distributed teams. Recently, McMahon offered his advice to TMW Systems and its customers.

A successful implementation generates more than cost savings.

The challenges involved in implementing an enterprise software application are well known. They include a broad range of possible technological issues, issues connected with loading data from legacy systems, the cultural challenges that always arise when addressing enterprise-level change, and issues connected with resourcing, logistics and planning.

Among these issues, challenges associated with learning are generally recognized as pressing, but are nearly always underestimated. When they are addressed, learning issues are most frequently addressed in too narrow a way to fully support the complex value propositions associated with enterprise software systems.

Business Cases for Enterprise Software

The business case for enterprise software is generally built on a two-tier basis. The first tier consists of cost savings generated by the automation of business processes associated with a successful implementation. Generally, an attempt is made to demonstrate that these cost savings alone provide sufficient justification for purchase and implementation costs.

However, a successful implementation generates more than cost savings. It also makes real-time business information available to management in a clear, easy-to-manipulate form. This information makes it possible to respond more quickly to changing market conditions, assess profitability of product and service lines, and manage to target growth and return rates.

The second tier of the business case for enterprise software applications rests on the potential for enhanced revenue and profitability generated by strategic management to real-time business information. Generally, the upside potential of this business case far exceeds the cost savings generated in the first tier of the value proposition.

Unfortunately, learning objectives associated with enterprise software applications tend to focus on realizing a narrowly construed version of the first tier of the business case, and rarely include strategies for realizing the full value associated with the two-tier business case.

Cognitive Tasks

Addressing the full value proposition associated with a large software implementation generates an impressive hierarchy of learning tasks. These include:

IMPLEMENTATION PHASE	PROCEDURAL LEARNING TASKS
Install application	<i>Generally a case of detailed negotiations between technical staffs. However, since decisions made in this phase can have effects on operations and business management, cross-functional communication will involve shared vision and joint knowledge of system affordances and constraints.</i>
Load legacy data	<i>Again, generally a case of detailed negotiations between technical staffs. However, decisions about reassignment or re-categorization of legacy data may have long-term impact on operations and entry of new records. Representation of operations staff critical, and will involve shared vision, and detailed knowledge of software affordances and constraints, as well as detailed knowledge of flow of data through base business process.</i>
Train users	<i>Generally treated as extended procedural ("mouse and click") training in functionalities, menus and commands of new system. Actual cognitive tasking confronting new users involves knowledge of vision, business objectives, new system functionalities, base business process, and coding decisions necessary to enter new records consistently into application.</i>
Implement system	<i>Complex coordination issues affecting full range of functions and levels throughout the enterprise on and around "go live" date. In this phase, special attention needs to be focused on establishing communities of practice and ownership of documentation to ensure consistent handling of data entry and business process decisions across affected departments.</i>
Manage ongoing operations	<i>In this phase, once again, special attention needs to be focused on establishing communities of practice and ownership of documentation to ensure consistent handling of data entry and business process decisions across affected departments.</i>

OPERATIONS PHASE Requires Higher Competencies	CONCEPTUAL LEARNING TASKS
Generate and interpret management reports	<i>While generating management reports should be no more than a command or limited series of commands, customizing and then interpreting reports may involve a more extended cognitive background. Specifically, interpreting and responding to what should now be real time business information involves a new set of interpretive and coordination skills on the part of middle managers involved.</i>
Implement operations initiatives	<i>Effective data interpretation should result in the identification of opportunities for more effective management to strategic targets. Complex diagnostic reasoning skills as well as planning coordination and follow through will be involved. Access to best practices and historical information from similar enterprises will be key.</i>
Manage ongoing improvements	<i>Once again, managing the ongoing improvement necessary to realize the full value potential of the application will involve several levels of management and coordination among affected communities on an operational level.</i>

Learning Audiences/Learning Styles

A simple review of the broad range of cognitive tasks associated with a successful implementation reveals the breadth and diversity of the audiences involved. Technical staffs, operational staffs at all levels, several layers of middle management, and enterprise level executives all need to be involved. Each audience confronts a different mix of cognitive tasks, as well as the need to coordinate their outputs with several other audiences.

TYPE OF COGNITIVE TASKING	TYPE OF LEARNING DELIVERY METHOD
Individual performance, procedural content ("mouse and click" to get data in)	<i>Based on the audience's learning preference, either remote self-directed learning (online) or group learning (class room) may be indicated. Critical factors are consistent, clearly expressed, effectively organized user documentation, and the ability to practice with the system.</i>
Coordinated individual performance, procedural content (consistent "mouse and click" to get data in consistently across large user group)	<i>Based on the audience's learning preference, either remote self-directed learning (online) or group learning (class room) may be indicated. Group-based learning, however, is the more likely best fit. Critical factors are consistent, clearly expressed, effectively organized user documentation, and the ability to practice with the system as a group.</i>
Coordinated individual performance, interpreted and procedural content (consistent interpretation of data to be entered across large user group, consistent "mouse and click" procedures on interpreted data)	<i>Group-based learning is the more likely best fit to allow for real-time in-person discussion of ambiguous interpretations. Real-time online discussion is a secondary option. At this point, organization of user group into related communities of practice confronting similar issues becomes important, making the social aspect of learning more prominent. Critical factor is consistent, clearly expressed, effectively organized user documentation with real time, possibly online, discussion features to supplement group-based learning.</i>
Cross-functional integrated performance, procedural content (similar interpretation of ambiguous data across users in several affected departments, similar "mouse and click" operations to get it entered in each case)	<i>Cross-functional group based learning. Online real-time documentation with discussion features.</i>

continued on next page



continued from previous page

TYPE OF COGNITIVE TASKING	TYPE OF LEARNING DELIVERY METHOD
Cross-functional integrated performance, analytical content (similar interpretation of management reports across several functional areas)	<i>Group-based learning</i>
Cross-functional integrated performance, synthetic content (joint action planning, based on similar interpretation of management information)	<i>Group-based learning</i>

Learning styles and appropriate delivery methods will vary both by audience characteristics, and the type of cognitive tasking involved. Speaking on a very general level, however, it is possible to observe:

Conclusions: Comprehensive Integrated Strategies

Effective learning strategies in enterprise software implementations should target the full value proposition of the software, and plan to build across the life cycle of the software implementation. Key elements of such a strategy include ensuring cross-functional representation in initial project decisions, effectively executed procedural user training, good user documentation, provisions for group based learning and online feedback, and effective integration of management level performances into the overall training plan. In addition, ongoing user communities and communication of best practices are key elements of any strategy to realize full value proposition of a piece of enterprise software.

Training Systems

At TMW Systems, our focus is on both the procedural learning that is required when an investment in one of our enterprise solutions is made, as well as the effective integration of management level performance into the overall training plan. In addition, ongoing communication of best practices is one of the key elements in our strategy to help you realize the full value of your investment.

In connection with this effort, TMW offers implementation services that include training of all personnel. The amount and type of training is based on the size of the operation, its complexity and the systems purchased. Our goal is simple – to make sure the right blend of online and face-to-face training is offered and delivered to the right staff at the right time and proper intervals.

The ways TMW Systems provides on-going training for its customers serves as a perfect example of how online learning and face-to-face education each has its respective role. For example, we believe strongly in teaching concepts in person. This type of training is important for long-time as well as new employees. For veterans, it can help them continue to make decisions based on their extensive knowledge of your operation while also taking into account new options. For new employees, it is invaluable. Learning about the processes that make your company work is absolutely essential for being able to make effective decisions on a daily basis.

For in-person teaching in a classroom setting, we also offer instruction under a program we call TMW University. Covering all of our product lines, these offerings provide detailed instruction for a large number of people all at once on anything from basic system operations to more advanced skills. Or, if your company needs to train just a few people but cover an in-depth list of issues or sharpen existing skills, this can be an excellent venue as well. The programs are offered at various locations and can be arranged specifically for your company if needed.

We also employ online methods for teaching procedures and for supplying support when there is a specific problem or question. We focus on both the procedural learning that is required when an investment in one of our enterprise systems is made, as well as the effective integration of management level performance into the overall training plan. For instance, we

utilize Webex, an Internet-based meeting and presentation service. Our support staff can connect directly to your company's computers through a high-speed connection to diagnose and resolve issues quickly and provide refresher training as needed.

Certification

Backing our multi-faceted approach to training at TMW Systems, is an intensive internal certification program for all implementation, support, quality assurance, documentation and development staff. All personnel involved in these processes are now required to complete training and testing so we can ensure a full understanding and mastery of the system and deliver consistent and complete skill sets that guide customers to solutions more quickly.

In addition, many of our staff members are taking advantage of training certification programs offered by our business partners. For example, the new Certified Professional Program for Microsoft Great Plains Business Solutions partners incorporates more solution areas in which to attain certifications, multiple levels of certification, and bundled learning content for continuing education.

The new Certified Professional Program for Microsoft Great Plains Business Solutions partners, first released in November 2001, includes 16 new tests and more tests are in development to increase the range of certification offerings. The new program provides two levels of certifications—the Certified Professional and the Certified Master. Certifications will be maintained through individual membership in the program. Microsoft Great Plains is also developing a program for organizational status.

Viewpoint

By Wendy Leavitt

Director of Editorial and Market Development, Fleet Owner

Crunching more than the numbers

Effective training can make (or break) an IT implementation. The question is: How can you tell which training programs are really getting the job done?

There is a dilemma at the very heart of IT training. Just as budgets are being subjected to ever-greater scrutiny, organizations are becoming increasingly conscious of the importance of effective training to the success of IT implementation programs. In a larger sense, organizations are also coming to more fully appreciate the value of knowledge, of learning in general, to their entire enterprise. The net effect of this dilemma is to turn up the pressure for training accountability even higher, leaving many managers looking for ways to access the worth of their existing initiatives as well as the potential return on any new investment in IT training programs.

Good for Business

"Good" in today's business environment means, first and foremost, good for the bottom line. In the case of training, however, even companies that have attempted to assign value to employee education programs have tended to use other measures. For example, one of the most popular evaluation systems is still Donald Kirkpatrick's "four-levels" approach, first introduced in a series of articles in 1959-60 and later collected and published together (Kirkpatrick, Donald. *Techniques for Evaluating Training Programs*. Alexandria, Virginia: American Society for Training and Development (ASTD), 1975).

Kirkpatrick described four questions or "levels" of training evaluation:

- > Level 1, Reaction: How do the trainees feel about the program?
- > Level 2, Learning: What exactly did they learn?
- > Level 3, Behavior: How did trainee behavior change based on what was learned?
- > Level 4, Results: Did the training have a positive impact on the organization?



White Paper: Training

Don't Overlook Training When Implementing New Technologies and Business Processes

“Many CIOs and other technology managers [read *training managers*] have had a two-fold problem.”

While this is a very useful way to begin to consider training outcomes, it does not by any means cut straight to the bottom line. Even the “results” level is still at arm’s length from ROI, stopping short of a true cost-to-benefit assessment. The other problem, of course, is that the approach really only works after-the-fact and can’t be used to help guide decisions about new training beyond saying, “We’ll never do that again!”

On the ROI Radar Screen

In order to both plan for training and determine its impact on the bottom line, companies today might do well to borrow techniques from other disciplines, such as information technology and finance. Consider Robert Benson’s system called, “The Profit Model,” for example. It was originally developed by Benson and his colleagues to help IT executives talk about technology implementation proposals in terms of profit potential rather than bits, bytes and protocols, but it sheds a strong new light on the related IT training programs, as well.

“Many CIOs and other technology managers [read *training managers*] have had a two-fold problem,” Benson notes. “First of all, they have often worked in a vacuum, isolated from the strategic business information that should be directing their efforts, either because no clear strategy exists or because they are not a party to it. Secondly, they have not been effective in communicating the ways in which technology [training] can improve performance to impact the bottom line.”

Benson suggests that managers must be able to answer three key questions:

1. What are the company’s “profit drivers”? That is, what business activities create profit either directly or indirectly, and how do we measure performance in those areas?
2. What does senior management intend to do to improve the performance of profit drivers?
3. What can a given initiative do to support management’s intentions?

Training programs are not all the same. Even the identical curriculum delivered in another manner (classroom versus on-line, for instance) or on another schedule may yield surprisingly different results. The instant a company starts to view IT training in terms of its impact on profit drivers, programs begin to lose their vague, amorphous shapes and assume the critical weight and mass necessary to get them on the ROI radar screen.

Because profit drivers are forward-looking indicators, leading rather than trailing changes to the bottom line, this is an especially valuable perspective shift. It not only helps companies to determine if a particular kind of training is actually changing behaviors, it allows companies to look ahead with more confidence and project the potential impact of a given training initiative on profit. The methodology can even be used to help evaluate new programs under consideration by creating “what-if” scenarios and then looking at their probable impact on various profit drivers.

Training and Profit

Truck fleets have several profit drivers or performance indicators that they might choose to track, such as accounts retained or lost per quarter, new accounts per number of sales calls, number of customer complaints, errors per 100 invoices, percentage of on-time and late deliveries, out of route miles per month, cycle times, employee turnover or absenteeism. These indicators are not directly expressed in red or black ink, but changes to them are advance signals of potential changes to the bottom line, which is what makes them such useful metrics.

This means that calculating the ROI for a given IT training program, for instance, is really a three-step process. The first step is selecting the profit drivers you want to track. Step two is establishing a cause and effect relationship between the program and changes to the profit drivers and, finally, step three is assigning a dollar value to those changes.



White Paper: Training

Don't Overlook Training When Implementing New Technologies and Business Processes

This kind of holistic, enterprise-wide perspective is not new for many functions within business. Companies have long scrutinized activities such as new product development, mergers and acquisitions or key management changes, for instance, in the context of their potential effects on the future of the organization. Now the insistence on accountability has finally also reached training's door.

It is good news and it is high time. Without evaluating IT training and understanding its impact, companies cannot effectively employ it to help shape the vibrant, knowledge-based organizations of tomorrow.

About TMW Systems, Inc.

Founded in 1983, TMW Systems is a leading developer and integrator of enterprise management software for the transportation industry. The company currently serves more than 500 trucking industry clients of all types and sizes. Its products help transportation and logistics companies leverage the technologies of their choice to easily collect, analyze and manage information for maximizing dispatch efficiency, and for delivering improved productivity and superior customer service. Recently, TMW and Guangdong South Satellite Telecommunications Service Co., Ltd. (SST), formed a strategic business alliance to deliver TMWSuite(tm) to China, and announced a software license agreement with Sinotrans, one of China's largest transportation companies. The company has also formed an alliance with TMW International, Ltd. to supply TMWSuite to transportation companies in Western Europe.

TMW's product lines include TL2000™ for the AS/400 platform and TMWSuite for Windows client/server architecture. For the past nine years, TMW has been named to the Weatherhead 100, an award given by the Case Western Reserve University Weatherhead School of Management recognizing the 100 fastest growing companies in Northeast Ohio. The company has also received the NorthCoast 99 award as one of the best companies to work for in Northeast Ohio for the past two years.

Tom Weisz and TMW Systems also received the 2001 Ernst & Young Entrepreneur of the Year Award for Business Services (Northeast Ohio). The award is sponsored nationally by CNN, the Kauffman Center for Entrepreneurial Leadership, NASDAQ and USA Today. Each year, a select group of judges reviews nominations, interviews finalists and determines winners for the Ernst & Young honors. The judges look at the financial growth of the companies, at the entrepreneurs as people and business leaders, their ability to adapt to challenges, their passion for their endeavors, their vision, and their courage to face risks while continuing to pursue their dreams.

Additional Information

For more information about Training and Implementation, call Steve Chilinski at 800/401-6682 or visit www.tmwsystems.com.



TMW Systems, Inc.
21111 Chagrin Blvd.
Beachwood, Ohio 44122
216/831-6606
800/401-6682
fax 216/831-3606
sales@tmwsystems.com
www.tmwsystems.com