SolArc RightAngle Enterprise Application Performance Support Front-End Analysis Report

Prepared for

RWD-R-4697

July 12, 2001

Submitted by:

SolArc RightAngle Performance Support Front-End Analysis Report

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Section 1. Executive Summary

Project Objective

SolArc is committed to providing a performance support solution that will support their clients and internal team members in the successful completion of their jobs and optimize the use of the SolArc RightAngle system to allow for a realization of the original client business goals. SolArc requested that RWD Technologies® (RWD) analyze the current performance support matrix of strategies and design a prototype training solution for end users for the current SolArc RightAngle Enterprise Application. As a preliminary step, RWD was requested to conduct an analysis that, in part, contained the end users' training experience with recommendations and a plan for enhancing training materials for improved delivery, whether leveraging traditional instructor-led or eLearning strategies. Additionally, the analysis team was to identify any opportunities or channels to further support optimal performance by end users of SolArc RightAngle and to look at how the SolArc organization is focusing upon the end user experience.

Project Deliverables

The primary project deliverables were:

- An analysis report of the SolArc RightAngle end user community to identify factors impacting performance and define basic inadequacies of the current SolArc RightAngle training program that includes a broad set of recommendations for improving end user performance
- A training prototype
- A project plan to address pressing training development needs as a SolArc product and outline further program evolution into an e-Commerce eLearning training product

Project Benefits

Specific project benefits include:

- A thorough review of the organization, processes, tools, and strategies used at SolArc to provide focus on end user performance of the SolArc RightAngle Enterprise Application
- An opportunity to integrate client feedback into the information analysis seeking to answer the question, "What do clients think about SolArc's ability to provide them with successful performance support strategies?"
- A glimpse at the deeper business visions and objectives of the executive leadership team and how these fit into the perceptions and performances of those individuals tasked with end user performance support

- A preview of a new training prototype based on the analysis findings and recommendations
- A proposed plan for moving forward

Customers

Primary Customers – SolArc Training Manager, Support Division Director, and VP of Field Operations

Secondary Customers – SolArc Support Division, Documentation Team, Online Manager, and SolArc RightAngle clients

Project Resources

Executive Sponsors – Jim Kiser, Vice President of Field Operations

SolArc Training Manager – Leigh Anne Winters

Consultants – Dan Brown and George Bradford, RWD

Scope

The project focused on reviewing the current state for providing **end user** performance support for SolArc RightAngle clients. Specifically, the analysis reviewed the major areas that are typically associated with performance support. With a focus on how client **end users** receive support from SolArc, the consulting team targeted SolArc operational areas with a review of business objectives, the "ideal" state of operation, and the current state of operation with any identified or perceived challenges, which impede or support optimal **end user** performance. The scope of the analysis was to find where SolArc may improve operations to better target end user experience. The analysis provides recommendations to findings where SolArc can take different actions to improve end user performance. Typically, findings from this type of analysis will be related to the following areas:

- Training (i.e., existing training materials, programs, facilities, strategies, etc.)
- Organization (i.e., help desk teams and functions, online publication and support, etc.)
- People (i.e., the instructors who deliver training, special and necessary competencies, etc.)
- System (i.e., the application itself, the network infrastructure, desktop environments, etc.)
- Documentation (i.e., reference documents, documentation management, etc.)

The analysis team interviewed specific individuals internal to SolArc, as well as SolArc RightAngle end user clients. The team also reviewed existing training materials and evaluation forms. This information was used to develop a high level and area specific report of findings and recommendations for the future performance plan of SolArc. The analysis team also constructed a training prototype based on the findings and recommendations of the analysis. Finally, the analysis team constructed a project plan to provide SolArc with specific directions for moving forward.

Milestones

Date(s)	Milestones
6/18/2001	Conducted Project Alignment
6/19/2001	Initial Interviews: • DJ Chance – Sales (Conceptual Presentation) • Lance Laubach – Director of Services • Jason Hopkins – Director of IT • Jim Kiser – VP of Field Operations • Catheryn Mason – Manager of Documentation
6/20/2001	Interviews – continued: • Leigh Anne Winters – Manager of Training • Brad York – Business Expert • Bryan Davis – Manager of Online Support • Pat Newgent/Duke Mattoon – Software Engineering • Jennifer Broker – Manager of Account Owners • Jason Brandt – Technical Consultant • Jerod Jacobs – Business Expert
6/21/2001	Interviews – continued: • Donna Broussard – Business Expert Materials review: • Training Evaluations • Training Documentation
6/22/2001	Interviews – Continued: • Al Yowell – Technical Consultant • Cliff Cravello – Project Manager Materials review – continued: • Training Evaluations and Documentation • Documentation Needs Analysis Report
6/25/2001	Statistical Analysis of Training Evaluations
6/26/2001	Interviews – continued: • Eddie Evans – Client, Premcor – Non-crude Accounting • Angela Orriss – Client, Premcor – PM, Crude • Bob Mann – Client, Premcor – PM, Non-Crude • Andy Esterer – Client, Premcor – Project Director • Darryl Besse – Client, Premcor – PAT/Risk

6/27/2001	Interviews – continued: • David Dunkin – SolArc Chief Operating Officer
6/27/2001-6/31/2001	Synthesized Data and Delivered draft SolArc Performance Support Front End-Analysis
6/31/2001	Presented draft Project Plan, Training Prototype, and Analysis Report
7/11/2001	Delivered Final Project Plan and Analysis Report for client sponsor review
7/13/2001	Delivered and Presented Final Project Plan, Analysis Findings and Recommendations, and Training Prototype

Key Findings and Recommendations

Given that SolArc is seeking to create a long term Performance Support plan that addresses end user performance issues, increases internal SolArc employee productivity and satisfaction (with respect to supporting the growing SolArc RightAngle end user community), future client training, and system optimization, a significant level of effort exists. Broad deficiencies surround the area of performance support. We have developed our recommendations understanding the difficulty of addressing numerous areas for improvement and maintaining the core day-to-day business. We have based these recommendations on the criteria of criticality, impact, and level of effort.

Many factors impact people's ability to perform effectively; however, skills/knowledge deficiencies are commonly not the primary factors. For this project, the analysis team conducted a high level front-end analysis to capture a broad view of the performance issues. Implementing a new training program is **not** enough to ensure that the desired impact on performance will occur. For example, for people to perform effectively they must understand their role and have access to clearly defined processes, end user focused tools, and accurate information. In addition, for the successful implementation of training initiatives to occur, a need for some cultural change at SolArc exists. Some change management and a strong early “win” will strengthen the promotion of this important undertaking.

The following table summarizes some of the key findings and recommendations of the analysis. The detailed findings and recommendations can be found later in this report.

Key Finding(s)	Key Recommendation(s)
Enhance the existing training program	
• Existing materials do not follow adult learning theories and instructional design principles.	• Redesign existing materials to follow improved instructional design structure and strategies.
• There is no PAT training.	• Build PAT training.
• Current accounting course does not sufficiently address accounting and SolArc RightAngle competencies.	• Design deeper competency building course for Accounting.
• There is no Train-The-Trainer (TTT) course.	• Build a TTT course.

Build a certification program	

• Current instructional design does not include certification – there are no competency assessment strategies.
• Certification strategy should be designed for Partners, End Users, and potentially Internal to SolArc audience (such as Project Managers and database engineers).
• There is no current strategy to determine trainer competency for Solarc RightAngle (SRA IV) Trainers.
	• There is a universal interest in certification in a variety of forms from both SolArc employees and from SolArc RightAngle clients. A certification program will provide greater quality assurance and client confidence while further profiling SolArc product offerings.
	  • SolArc should prioritize the development of a certification program in the following order:
	  • SRA IV Trainer certification
	  • SRA IV Implementation certification for SolArc Partnership Group
	  • SRA IV End User certification – in each product domain
	  • SRA IV Project Manager implementation certification

Update the training program to leverage mobile delivery and/or eLearning strategies	
• Current training strategy is presently 100% instructor-led and held in SolArc offices. • Current training program does not adequately address training location requirements and related issues. • SolArc business expansion objectives and projections include growing the business to as high as ½ billion dollar sales level within three years.	• SolArc must consider offering training at client sites for additional fees. Where possible, the training team will identify means to optimize the process for on-the-road training delivery. • In the near future, client demand may quickly outpace the ability to provide traditional instructor-led training. To address this, SolArc should soon begin designing as many of the course training programs into an eLearning delivery strategy. Such strategies can be used to provide new user training, as well as new system delta training, regardless of the geographies of the clients.

Internal focus – align internal organization and communication	
• There is currently no centralized, coordinated vision to provide end user support, which includes several channels such as web sites, online help, and [system] documentation that will support a client base much larger than at current levels. • The synergy between working groups is not strong. • Organization has too little synergy and coordination. • Current level of executive communication of decisions and visions is insufficient.	• Revisit current client support strategies to develop centralized, coordinated vision to provide end user support, which includes several channels, such as web sites, online help, and [system] documentation for a client base 10x larger than at current levels. • Improve the synergy between working groups – a change management effort would likely identify best strategies to improve working group synergies. • Build an internal communication strategy that permits information sharing in predetermined fashion, such as 2nd and 4th Friday of each month – gather a round table of engineers and support teams for 1 to 1.5 hours with a conference call to permit remote participation. Better yet, hold the sessions with Interwise and record and log the sessions for later review. • Improve communication throughout the company, especially from leadership to teams.

External focus - strengthen end user SolArc RightAngle experience with SolArc People & Technology	
• Current training program does not adequately address the wide range of skills and competencies of the learning audience. • Clients are anxious about the period from go-live to + 6 months and feel they will require additional support from SolArc. • In the future, one client is planning to fully support the system with internal resources with minimal support from SolArc. • There is a shared client perception that the support teams have a gap in system knowledge (attributed to transition from the 3.x product to SRA IV) as the SolArc team continues to be unable to answer client questions. • Client perceives that technical and business communication from SolArc is inconsistent and not sufficiently thorough.	• The marketing and sales of the training program must be revised to address required skills and knowledge of the learning audience and to better prepare the client expectations. • SolArc must have a strong go-live transition support strategy to ensure client success. Client success is worth many times more than dollars spent in advertising. Equally true is that client disasters can be devastating to technology solution providers and require many, many times more dollars to correct. • Correct the perception that support teams have inadequate system knowledge. This may be addressed by better internal communications, better coordinated marketing and sales efforts, and improved client management techniques, such as would be the result of project management training. This will also address client perceptions that SolArc technical and business communications tend to be inconsistent and not sufficiently thorough.

Continue to identify revenue opportunities closely associated with the core business	
• There is no on-site training. • There are no certification programs with partner organizations. • There is no eLearning delivery strategies or a robust online user community.	• As identified earlier, on-site training should be offered, at additional expense. SolArc should quickly move to take advantage of the opportunity. • Certification programs for external clients, external trainers, or other implementation partners could be achieved with training and eLearning strategies, coupled with an e-Commerce initiative where certification testing takes place, such as RWD does for many global clients (e.g., Novell, Cisco, AutoDesk, HP, etc.) through www.certification.net. • SolArc should increasingly look at building a portal for their end user community. The easiest way to build a market niche is to regularly have people meet and exchange information. Such a community will by themselves define the niche.

Consider partnership opportunities for non-core business areas	
• Where do training, documentation, and online community building fit with the SolArc core business? If the market niche is growing too quickly and demanding too much in resources to support anything other than application development, then perhaps these areas should not at this time be considered part of the core business.	• SolArc should continue to focus on building the market niche they have identified and continue moving quickly forward to support the growing number of opportunities becoming available. SolArc should constantly consider where their resources are best positioned and whether partnerships offer a unique advantage to move the business forward quickly. • RWD specializes in focusing on the end user experience and partners often with companies with cutting edge solutions, but who lack the experience and tools to quickly deliver end user training, documentation, online performance support solutions, online universities, certification programs, or even evaluating performance support solutions (and calculating program or project ROI). One solution is to consider RWD as a training partner. RWD can also offer support into developing a certified project manager program that can strongly support client retention and confidence.

Develop and evaluate application and performance support programs	
• SolArc and SolArc clients may not have a means of measuring the effectiveness of the SolArc RightAngle application or programs designed to address end user performance support. • To the analysis team's knowledge, no measurement has been made against original client SolArc RightAngle implementation goals. • The current client project activities may not have a baseline to measure ROI.	• Develop and implement evaluation criteria for SolArc RightAngle and SRA IV Performance Support. • Identify target performance improvement goals. • Identify client organizational goals for current SRA IV systems.

Moving Forward

The next phase of this project will be to integrate and implement some of these findings with the development of new training designs. Moving forward, it will be critical to gain sponsorship and to ensure that the education, performance support, and any change management initiatives remain integrated. Detailed findings and recommendations follow within this document. Detailed steps for moving forward are outlined in the separate Project Plan Document.

Closings

This analysis could not have succeeded without the fantastic support provided by the individuals who participated in the effort, especially the effort put forth by Leigh Anne Winters. Everyone was open and honest in sharing information, and the analysis team has a high level of confidence in the data gathered and in the findings and recommendations. There is a huge opportunity to better meet the end users' needs by addressing the issues defined during this analysis. To capitalize on this opportunity, SolArc management must provide strong ongoing sponsorship in implementing the recommendations.

Section 2. Methodology

This section provides an overview of the methodology the analysis team used to conduct the analysis. It also describes the technical approach and lists the individuals who were interviewed and the materials reviewed.

Methodology Overview

The analysis process is a comprehensive approach for analyzing performance requirements at the "front end" before committing time and money to developing particular development interventions. Data gathered during the analysis is used to make decisions about the most appropriate strategies for ensuring that job performers are able to perform most effectively on the job.

To integrate people successfully into complex work systems, a working model of human performance is needed. The following model has been used successfully for optimizing workplace performance:

- Define and communicate the goals of the organization to the performers.
- Specify tasks that performers need to accomplish on the job to add value to the organization.
- Provide the appropriate skills and knowledge just-in-time through training and performance support.
- Engineer the work environment and provide the appropriate tools and information to support the tasks required to produce the accomplishments.
- Provide the motivation and incentives required for performers to produce the accomplishments.

With this approach, the recommended actions will be directly connected to the desired business outcomes. In addition, the performance-based model will surface barriers to successful deployment of the development program, allowing us to include strategies that will mitigate (or at least minimize) these obstacles.

Technical Approach

Understanding the above criteria, the analysis team used the following approach to complete the analysis:

1. Project Alignment
   - *Conduct Alignment Meeting* - Held an alignment meeting on June 18 to specify project goals, scope, and immediate direction of the project.
2. Analysis
   - *Conducted Current State Analysis* - Conducted current state analysis beginning with the alignment meeting on June 18, 2001 and ending with the last interview on June 26,

2001. In addition to collecting information through interviews, the analysis team reviewed existing training materials and completed course evaluations.

- *Synthesize Data and Develop Recommendations* – Analyze all source information and create recommendations for an enhanced training and performance support plan that contains support findings, impact, recommendations, and an estimated level of effort (where applicable or possible).
- *Develop Project Plan* - Presented Draft of the Project Plan on July 3 to discuss details on the scope of work, project assumptions, deliverables, and project schedule for follow-on project to address end user training and performance with the SolArc RightAngle application.
- *Develop Training Prototype* - Presented Draft of the Training Prototype on July 3 to illustrate how RWD would restructure the instructional design of a selected topic from an existing SolArc training course, based on the findings of the analysis.
- *Document and Review Recommendations* – Delivered the front-end analysis report on July 13 that contained general and specific findings and recommendations.

3. Develop enhanced training materials based on Training Prototype – *To Be Determined* (*TBD)*
4. Develop new training materials based on Training Prototype and current SolArc business needs - *TBD*
5. Pilot Testing/Program Evaluation – *TBD*
6. Develop a certification program for Solarc RightAngle trainers, partners, end users, and project managers - *TBD*
7. Develop eLearning solutions of targeted courses for an e-Commerce approach to leverage internet and distance learning technologies and theories - *TBD*
8. Support SolArc efforts to build Online Help and SolArc RightAngle Online Community Portals - *TBD*

Information Sources

The analysis team worked with a number of experts and their managers to gather the information for this report. The team also interviewed a number of SolArc RightAngle clients who have gone through the training program. The team also reviewed source documentation provided by SolArc contact Leigh Anne Winters. This subsection lists the individuals interviewed and the documents that were reviewed:

Interviews

The following is a list of SolArc employees and SolArc RightAngle client users who were interviewed or questioned during the analysis period:

Analysis Interviews	
SolArc Employees	**SolArc RightAngle Client Users - Premcor**
• DJ Chance – Sales (Conceptual Presentation) • Lance Laubach – Director of Services • Jason Hopkins – Director of IT • Jim Kiser – VP of Field Operations • Catheryn Mason – Manager of Documentation • Leigh Anne Winters – Manager of Training • Brad York – Business Expert • Bryan Davis – Manager of Online Support • Pat Newgent/Duke Mattoon – Software Engineering • Jennifer Broker – Manager of Account Owners • Jason Brandt – Technical Consultant • Jerod Jacobs – Business Expert • Donna Broussard – Business Expert • Al Yowell – Technical Consultant • Cliff Cravello – Project Manager • David Dunkin – SolArc Chief Operating Officer	• Eddie Evans – Client, Premcor – Non-crude Accounting • Angela Orriss – Client, Premcor – PM, Crude • Bob Mann – Client, Premcor – PM, Non-Crude • Andy Esterer – Client, Premcor – Project Director • Darryl Besse – Client, Premcor – PAT/Risk

The results of these interviews became approximately 26 pages of rough notes. It is critical for any analysis team to follow a structured approach when refining these notes for findings--and, ultimately, recommendations--that the process be logical, repeatable, and unbiased. This is to ensure that the results are as highly credible as possible. To achieve this, the analysis team followed a multi-step process:

1. Review each data element and tag it as belonging to one of the five identified target areas that can impact end user performance: A) Training related, B) Organization related, C) People related, D) System related, or E) Documentation related.
2. Reenter all the information into matrix four columns wide with the following headings: a) Type, b) Finding, c) Source, and d) Themes. The Type column was used to identify between areas A, B, C, D, or E as described previously in step 1.
3. All of the materials are then grouped into similar matrices sorted by Type, and then secondarily sorted for similarities in the Finding column.
4. Then the team could generate a more finely worded finding (if better wording is found to be needed) as a theme in that column.
5. A new matrix structure was then designed with the following columns: a) Item, b) Finding, c) Impact, d) Recommendation, and e) Level of Effort. The Item column is for numbering the findings. The themes from the previously sorted matrix are collected in the Finding column. Again, the analysis team reviewed the findings for common

threads and grouped them accordingly. Some of these threads naturally suggest higher levels of organization, which became the Item titles for each finding.

6. The team next reviewed each finding and authored recommendations that would address each. This is a tedious task, the success of which is completely dependant upon the experiences and skills of the analysis team, since the team must draw upon their own to draft recommendations.
7. When completed, each finding and recommendation was revisited to determine how critical the finding is for the successful support of end user SolArc RightAngle performance. The analysis team was forced to use a greater level of subjectivity in applying a level of criticality. However, where possible, this level was determined from how many instances the finding was repeated by different interviewees, or from how central it is perceived that something must be done to improve the end user performance support model at SolArc. Three levels were used: High, Medium, and Low.
8. Finally, the analysis team reviewed each recommendation to estimate the level of effort required to successfully fulfill or complete. The level of effort entries were either as a resource type (e.g., training team developer, engineer, etc.) and a quantity of time, or as "Unknown" or "NA" (Not Applicable). These latter two designations were provided in those instances where there are too many unknowns to prevent making any reasonable estimate or where an effort is likely part of the job description someone normally does in the regular course of business, so it is not considered extra effort.

The final matrix covering each area (i.e., Training, Organization, People, System, or Documentation) is presented in Section 3: Findings and Recommendations.

Documentation Review

During the analysis, the analysis team gathered and reviewed the following documents:

SolArc Course Materials	SolArc Course Evaluation Forms
Introduction to Solarc RightAngle	Deals – with M. Kissinger instructing, 05/21/01
Deals Course	Accounting – with D. Broussard instructing, 05/23/01
Scheduling Course	
Accounting Course	
Pricing/Valuation Course	
SolArc DataModel Course	
Document Generation Course	
Introduction to Reporting	

The review of the SolArc course materials followed a structured approach to the application of sound, widely accepted principles of Instructional Systems Design (ISD). The team created a checklist of 24 principles, which the team used on the materials to roughly determine how instructionally well designed are these SolArc course materials. The checklist and the findings

are presented in Section 3. Findings and Recommendations. The team also reviewed the process and originating worksheets by which the materials were first developed. Following the chronological development of notes and the process of achieving consensus on training topic targets and objectives, it became apparent that the training manager used an approach to build training materials as an experienced instructional designer would also follow.

The training manager had earlier developed Course Evaluation Forms for those courses already offered to SolArc RightAngle clients. These forms were well designed and covered most of the areas typical of a Kirkpatrick level 1 evaluation, where trainers gather feedback upon the conclusion of a course offering to determine client levels of satisfaction with the facilities, the materials, the trainer, and themselves (i.e., the latter to answer the question: Do the learners believe that what they have learned will be beneficial to them back on the job?). The training manager designed these forms to cover those areas as “Training Facilities,” “Training,” “Instructor,” and “Participants.” Most of the questions covering these areas follow a 5 or 6 level Likert scale, with options for learners to choose from Strongly Agree to Strongly Disagree to Not Applicable. The training manager also included an area of open-ended questions to which learners could write in their responses. Since the results of these completed forms is on paper, and since the value of a structured analysis of the feedback requires a statistical treatment of those participating in the evaluation, the analysis team constructed an MS Excel spreadsheet and entered the available data from these courses in order to analyze the data using the mode, average, and standard deviation of all learners on each item and each targeted area as a whole (e.g., Training Facilities). The findings are also presented in Section 3. Findings and Recommendations.

Section 3. Findings and Recommendations

During the analysis, the team gathered information about factors impacting SolArc's ability to effectively address SolArc RightAngle end user performance. This section begins with a summary of immediate recommendations as presented in the Executive Summary. The analysis team developed these summary, high-level recommendations from the body of findings and recommendations that make up the body of data collected through the interviews. This organization is not repeated in this section to permit the reader to arrive (or to not arrive) at similar recommendations. Therefore, the supporting findings and recommendations provided in the following five subsections follow the Training, Organization, People, System, and Documentation categories.

Following this is a presentation of the analysis of instructional design quality of the existing SolArc training materials for SolArc RightAngle. Finally, there is a presentation of the analysis of the Course Evaluation forms.

This section provides the findings, recommendations, impact of the recommendations, and an estimated level of effort to implement. The recommendations all work together to build a comprehensive solution for performance support and optimization of end user performance support.

The following is a sample summary of immediate recommendations, which reflect the High Impact findings taken from the detailed matrices following this summary:

- Enhance the existing training program
- Build a certification program
- Update the training program to leverage mobile delivery and/or eLearning strategies
- Internal focus – align internal organization and communication
- External focus - strengthen end user SolArc RightAngle experience with SolArc People & Technology
- Continue to identify revenue opportunities closely associated with the core business
- Consider partnership opportunities for non-core business areas
- Develop and evaluate application and performance support programs

Training Related

Item	Finding	Impact	Recommendation	Level of Effort
1	**On training business objectives**			
	Training is a product that will be sold for profit.	High	Continue business model with training as a revenue-generating product and expand in a phased approach the delivery of training to customer sites for increased fees. However, as with any product development and marketing efforts, there must be sufficient and knowledgeable resources supporting the product, and marketing teams must have a clear understanding of the product and close collaboration with the training support team.	NA
	Training design should permit conducting training events on location.	High	See previous	Addressed forward (See matrix C – People related – item 6)
2	**On immediate training needs**			
	Existing materials do not follow adult learning theories and instructional design principles.	High	Redesign existing materials to follow improved instructional design structure and strategies	2 new training developers + business topic Subject Matter Experts (SMEs)
	There is no PAT training.	High	Build PAT training	1 new training developer + 1 business topic SME
	Current accounting course does not sufficiently address accounting and SolArc RightAngle competencies.	High	Design deeper competency building course for Accounting	1 new training developer + 1 business topic SME
	There is no Train-The-Trainer (TTT) course.	High	Build a TTT course	1 new training developer = 5 new training development resources + business topic SMEs (per topic area)
3	**On internal training focus**			
	• There is an internal need to train on PAT functionality. • There are several internal training initiatives active at SolArc. • Implementation team training must include set-up and how to load client data into the system.	Low	There are currently insufficient resources and too many critical path training related projects to support internal training. However, the training team will be building new courses and redesigning existing materials following adult learning theories and instructional design principles, which other internal projects teams can leverage. Therefore, close association and coordination should take place between the training team and other internal training projects.	NA: existing training team needs to meet regularly with other teams to share best practices.
4	**On training design** • Training design must improve learner active experience, rather than passive. • Instructor and learner expectations must be made clearer. • Training design should include exercises	High	• The training design must address each of these findings to improve knowledge transfer and provide high customer satisfaction. • Preparing the learners may include a required introductory course, perhaps online, email or other communications	(See immediate training needs estimated above.)

	to teach how to use the online help system. • Training design should include a structure to permit guest expert's presentation of tips and tricks. • Training design must include an improved treatment of preparing the learners for the training . • Training design needs to improve the ratio of conceptual presentation and hands-on practice. • Training design must address jargon and industry terminology. • Training requirements may include a maximum time restriction – e.g., 2 days for the overview training. • Training design must address potential audiences with minimal experience and confidence using PCs in client-server environment. • There is some repetition of content through different courses. • Have a quiz periodically.		sent before the training event to set learner expectations. • Part of the Prepare Me design might include notes about the training and where the learners can go to begin preparing themselves for the training program – or a job aid with important basic terminology + graphic designs depicting concepts. • If the instructional design repeats material in different sections, then the design must communicate that some repetition will take place and why it is there. • The new training design should include sufficient numbers of self-check quizzes or similar exercises.	
5	**On training certification**			
	• Current instructional design does not include certification – there are no competency assessment strategies. • Certification strategy should be designed for Partners, End Users, and potentially Internal to SolArc audience (such as Project Managers and database engineers). • There is no current strategy to determine trainer competency for Solarc RightAngle (SRA IV) Trainers.	Medium	There is a universal interest in certification in a variety of forms from both SolArc employees and from SolArc RightAngle clients. A certification program will provide greater quality assurance and client confidence while further profiling SolArc product offerings. SolArc should prioritize the development of a certification program in the following order: • SRA IV Trainer certification • SRA IV Implementation certification for SolArc Partnership Group SRA IV End User certification – in each product domain	Initially 1 new training developer for an extended period (depending upon the number of certification areas to build)
6	**On training delivery**			
	Trainers/Instructors must have a sufficiently deep level of technical competency.	High	The difficulty with maintaining sufficiently deep technical knowledge of the product is identifying where and how the individual obtains and maintains this knowledge through time without negatively impacting engineering schedules. Only the engineering team has this technical knowledge, but they do not have time or the competency to function as trainers. A solution could be achieved through a working partnership between training and engineering, where for 1 week every 1 or 2 months, the trainer works with engineers on particular tasks to provide continuous learning and close familiarity with the system.	Engineering teams see reduced impact with dedicated trainer, see increased time mentoring dedicated trainer during identified cross-training sessions, and possibly additional time freed up due to trainer working with them.
	• Adjusting the training to improve	High	It is established fact that training must	Gathering the relevancy

	relevancy to the client cannot be supported by engineering – it must be done by a training person. • Current efforts to adjust training relevancy to the immediate audience is too resource and time intensive.		provide high relevancy between the training content and how this new knowledge or skill will be used back on the job for a training event to be successful. Relevancy in this context means to provide opportunities for the learners to practice tasks or solve problems that model what they do on the job. A redesigned training program will have the structure to support the presentation of highly relevant exercises. However, the details of these exercises must be gathered from each client prior to training delivery. This requires an additional individual working with the client during the implementation phase to gather specific details to be worked into the training program for the end user training program roll out.	details will require an additional resource during the implementation phase – this effort is not expected to require more than 5 days of work for each client SRA IV implementation
	Previous deliveries of the training programs have been unstructured and inconsistent.	High	The redesigned training program will address the perception that the training programs have been unstructured and inconsistent.	NA
7	**On client perceptions of SolArc training**			
	Some SolArc training has received high praise..	High	SolArc leadership teams should recognize and applaud the successes received through previous efforts – these achievements have come through significant constraints of resources and particular knowledge sets.	NA
	• Instructional design of accounting course did not work. • There is a client training requirement in accounting to instruct higher level cognitive skills – i.e., Analysis, Synthesis, and Evaluation (in following Bloom's Taxonomy of the cognitive domain).	High	The accounting course must be reworked. SolArc should propose a special partnership effort with Premcor to build a specialized training program that uses the SRA IV as a discovery tool to train higher analysis skills for accountants and managers.	Accounting effort is included in above noted estimate, but not for a specialized training design identified here. For this, SolArc would need 1 additional resource for roughly 2 months of work + business area SME.
	Instructional design must include exercises that are very relevant to the work clients do..	High	Clients require course relevancy to their work environment.	Previously addressed
	Valuation/Pricing course had too much documentation and the course was too complex – this reflects the complexity of the topic..	Medium	The Valuation/Pricing course must be redesigned.	Previously addressed
	Training design should include business process flows..	Medium	In keeping with the SolArc business model, SolArc should offer clients to include business process flows as part of the training for an additional cost. Client acceptance of this will require additional resources in gathering the information during the implementation phase. NOTE – such resources at SolArc are not currently available.	To gather business process flows, SolArc can expect to need 2 new training development resources on the client site.

Organization Related

Item	Finding	Impact	Recommendation	Level of Effort
1	**On organizational business objectives**			
	There is currently no centralized, coordinated vision to provide end user support, which includes several channels such as web sites, online help, and [system] documentation that will support a client base much larger than at current levels. The following are SolArc business leader key concerns and reflect the general perception of future company growth and ability to function well within a state of rapid growth: • "Bring the message to the market and having the market adopt it." • Sales should increase, and the organization will have to be ready to support this – leveraging as much as possible tools, processes, etc. • "Knowing who [and how] you want your customer to be" • Retention of talent – even during market downturns • Achieving "high trust in cross-functional activities" • Dominate energy trading market – become the preferred trade system in deal capture and risk management • Achieve and sustain business desired growth rate – "0 - $500 million in three years has happened [in the general marketplace]… it is not an impossibility." • Achieve a company-wide business competency/acumen to support continued growth in this market niche. • Achieve a company-wide SolArc RightAngle technical competency. • These last two bullets are to support developing "trusting" customers, with few to no problems. • "Training of our people and the user community is very important… to not have adequate training and formal documentation is inexcusable."	High	Revisit current client support strategies to develop centralized, coordinated vision to provide end user support, which includes several channels such as web sites, online help, and [system] documentation for a client base 10x larger than at current levels.	NA
2	**On organizational needs**			
	• The client support team is understaffed. • Resource constraints strain working groups, need dedicated trainers. • Current formalized job descriptions do not include training except for current training manager and one training support person – all others must support training without this being on their job description.	High	• Identify an individual either presently employed at SolArc or employed elsewhere to be the first dedicated SRA IV technical trainer. NOTE – this does not imply that this individual will have sufficient time to also be a training developer – at the present level of organizational need at SolArc, these two roles (i.e., trainer and training developer) must remain separate.	• 1 person full time • Additional meetings or other team building events

			• Improve the synergy between working groups.	
	End user support teams may not presently be part of the revenue generation model and may, therefore, be under-prioritized.	High	Integrate online information channel and other support teams into overall client support strategy with revenue generation and client satisfaction requirements.	NA
	• SolArc may not be good at capturing best practices and lessons learned and integrating these findings into a further evolved business practice. • Wish list: a method of logging client issues and provided solutions	Medium	SolArc needs to build a tool and a process to capture best practices and lessons learned – lessons learned might be acquired in association with product implementations, client support, and/or training.	1 engineer for a maximum of 1 month to build an information repository, plus management team needs to document and publish a process to review lessons learned and best practices and incorporate this into the work environment
	Channels to acquire new talent at SolArc are insufficient.	Medium	SolArc must begin identifying channels to acquire new talent – growth demands are likely going to take off fast and SolArc must be prepared for the time it will take to ramp new talent into the organization.	Unknown
	There is a strongly recognized need to have a certification program.	High	Develop a certification program.	Previously addressed
3	**On internal organizational synergy and communication**			
	• The synergy between working groups is not strong. • Organization has too little synergy and coordination.	Medium	Improve the synergy between working groups – a change management effort would likely identify best strategies to improve working group synergies.	Unknown
	Current level of executive communication of decisions and visions is insufficient.	High	• Build an internal communication strategy that permits information sharing in predetermined fashion, such as 2nd and 4th Friday of each month – gather a round table of engineers and support teams for 1 to 1.5 hours with a conference call to permit remote participation. Better yet, hold the sessions with Interwise and record and log the sessions for later review. • Improve communication throughout the company, especially from leadership to teams.	NA
	Current efforts to build online help require constant coordination between engineers and documentation teams – the present tool of choice is RoboHelp by eHelp.	Low	Consider other technical options to provide online help solutions that do not heavily impact engineering teams – there are other options than RoboHelp-based technical solutions (e.g., RWD InfoPak and InfoPak Simulator).	Unknown
	Internal technical communication is poor.	Medium	Current documentation efforts will address internal technical communication needs.	NA
	SolArc may not be good at managing the expectations of client coordinators.	Medium	There is some perception that SolArc does not manage client coordinators well enough. There is likely a need to spell out the roles and skill requirements of such individuals and take a more proactive approach to supporting SRA IV clients identify these individuals in their organization. Also, it is likely necessary to have a specialized half-day training	1 SolArc training developer 5 days

			program held in SolArc offices to familiarize these teams with the appropriate SolArc team and begin relationship building.	
4	**On client perceptions of SolArc organization**			
	• At client organizations, a completed trade requires roughly 10 to 12 different individuals to support the transaction. • At client organizations, trade support teams experience a turnover of roughly 30% - some of this may be attributed to the transition to the new system SRA IV.	High	SolArc training and support teams must be aware of the benchmarks for product involvement and employee turnover at client sites. Besides the number of projected active and passive users, the turnover of these individuals can be influenced by strong instructional design approaches. Active users will be those individuals who interact directly with SRA IV; passive users will be those individuals who request information or act upon information provided by active users of SRA IV. SolArc must maintain a client channel of communication that reaches the training team regarding the number of active and passive users and employee turnover levels.	Unknown – minimal
	Clients are anxious about the period from go-live to + 6 months and feel they will require additional support from SolArc.	High	SolArc must have a strong go-live transition support strategy to ensure client success. Client success is worth many times more than dollars spent in advertising. Equally true is that client disasters can be devastating to technology solution providers and require many, many times more dollars to correct.	Potentially 1 or 2 on-call individuals for an initial period, then a turnover period with greater communication traffic for up to 6 months
	• Clients are interested in having access to information via the internet/web sites.	Medium	Build a client information access channel through a web portal.	Unknown
	• In the future, one client is planning to fully support the system with internal resources with minimal support from SolArc. • There is a shared client perception that the support teams have a gap in system knowledge (attributed to transition from the 3.x product to SRA IV) as the SolArc team continues to be unable to answer client questions. • Client perceives that technical and business communication from SolArc is inconsistent and not sufficiently thorough.	High	Correct the perception that support teams have inadequate system knowledge. This may be addressed by better internal communications, better coordinated marketing and sales efforts, and improved client management techniques, such as would be the result of project management training. This will also address client perceptions that SolArc technical and business communications tend to be inconsistent and not sufficiently thorough.	Unknown

People Related

Item	Finding	Impact	Recommendation	Level of Effort
1	**On training business objectives**			
	Training team and revised/enhanced training solution must be in place within the next 6 to 12 months.	High	Prioritize efforts to address current training needs for building the identified new training courses and enhancing the existing materials. This will require the addition of four team members to support development efforts with targeted completion by mid Q3-mid Q4 timeframes.	Identified earlier – 5 new training development team members for 4 months
	There is a need for a certification solution to be in place by the end of Q4, 2001.	Medium	A trainer certification program should be in place by the end of Q4. This will require one additional team member to support development efforts.	Identified earlier – 1 new training development team member for an extended period (depending upon certification strategies employed)
2	**On internal competencies (not training team)**			
	There is a need to develop internal competencies for project documentation and the generation of [client] business requirements.	High	Efforts to optimize work connected with product implementation have a large associated value: efficient work practices lead to smoother implementations, satisfied clients, and satisfied employee teams. Additionally, more implementations can be made in less time. SolArc should prioritize efforts to build tools to support project execution and project management.	Unknown
	AO team is currently addressing training needs for their own uses that very much parallel the training program objectives currently existing and planned by the manager of training	High	AO team training efforts should meet regularly with training teams to learn how to best leverage designs and instructional strategies.	Minimal
3	**On trainer teams and competencies**			
	• There is a need to build a training team with competencies including industry knowledge, instructional systems design, and ability to "think outside of the box." • Instructor competencies (Accounting): They need to understand accounting and the business.	High	A training development team must be assembled to deliver training programs to enhance existing materials, to build the new PAT training course, to rework the accounting course, to build a TTT course, and to build a trainer certification program. This team must have competencies in industry knowledge, instructional design, and a demonstrated ability to think out of the box. SolArc does not currently have resources to fulfill this need. SolArc will find it necessary to partner with an outside company who specializes in the design and the management of technical training solutions with demonstrated experience in this field, and who has demonstrated an ability to work well with SolArc teams.	Previously addressed
	• Meeting current training requirements is not possible given current available resources. • Documentation, online support, and training should be together in a separate but new group.	High	SolArc must consider an organizational structure that permits improved synergy between the different disciplines of documentation, online publication and channel communications, and training. SolArc must also recognize the very different skills and knowledge involved	NA

			with each area – and should therefore not have one area manage the other.	
	TTT course must build identified competencies: communication skills, system knowledge (SRA IV), business knowledge, and process to adjust training to audience.	High	SolArc should prioritize the building of a TTT course that leads to consistent and thorough instructor preparation. This course would be the first phase in building a certified trainer program. The course must cover communication, group facilitation, and strategies in subject matter delivery.	Previously addressed
	• End user support coordinator must be more of a business expert, rather than a database expert. • Trainer competencies must include databases, trading market, and ERP in general.	Medium	Since the client coordinator will function in some capacity as a trainer to their teams, SolArc must work with clients to identify the requisite skill sets necessary to be successful in this position. These skills include, but are not limited to, business expertise and familiarity with database applications or ERP in general.	Previously addressed
4	**On certification**			
	• There is a need for a certification strategy designed for Partners, End Users, and potentially Internal to SolArc audience. • There is a need for a certification solution to be in place by the end of Q4, 2001. • Trainers should be certified. • There should be a certification process for real trainers. • "Certification program would be great!." -Definitely for Partners -Also for project managers, business experts, technical consultants, and custom solution providers -End users • "Business experts are not trainers. Just because they know the business does not mean they can train. We need trainers. Experts who know how to train." • There is a strong interest in internal system certification. • There is an interest in internal certification; however, such certification must support remote teams inclusion. • Project Managers/Internal Teams • There is a greater need to support Trainer, partner, and end user certifications. • CLIENT - Trainer certification is perceived by clients as an assurance of quality and commitment by SolArc in their products.		SolArc should consider building a certification program. As mentioned earlier in this document, there is a universal appeal to developing a certification strategy that makes both internal good sense, as well as good business sense. SolArc should design SRA IV trainer certification, followed by Partner Implementation certification, and End User certification. This should be developed in a phased approach with the first, the SRA IV trainer certification, being completed towards the end of this year.	Previously addressed
5	**On supporting training events - internal**			
	• Software engineers currently have a full job load and do not have bandwidth to fully support training events without compromising the system development	Medium	NOTE – this solution to support TTT events and having trainer be part of their team was presented earlier within this document.	Previously addressed

	schedule. • Knowledgeable resources to support training are not available (either do not have the knowledge or do not have the time).			
6	**On supporting training events – external**			
	Current training program does not adequately address the wide range of skills and competencies of the learning audience.	High	The marketing and sales of the training program must be revised to address required skills and knowledge of the learning audience and to better prepare the client expectations.	NA
	Current training program does not adequately address training location requirements and related issues.	High	SolArc must consider offering training at client sites for additional fees. Where possible, the training team will identify means to optimize the process for on-the-road training delivery.	If the training design is to include mobility, expect an additional 3 weeks of effort by a single new training development team member
	• CLIENT - Jerod and Jamie's on site support has been very valuable. • CLIENT - Instructors were competent in system knowledge – except Accounting. • CLIENT - Al Yowell has been great about [knowledge transfer] of system functions. • CLIENT - "One thing I'm happy about, is that Jerod [Jacobs] and Jamie [Franklin] come back with an answer as soon as they can. They are very responsive."	High	SolArc should communicate to their teams the result of the high praise some of the implementation team members have received, as well as recognize that additional efforts are necessary to correct identified training challenges.	NA

System Related

Item	Finding	Impact	Recommendation	Level of Effort
1	**On system support concerns**			
	• SolArc product quality assurance is weak. – System scalability and the number of end users supported are unknown. – There is no enterprise QA environment. • There is too little understood how some clients implement the system within a Cetrix server architecture.	High	Considering the strategic nature of the product SRA IV from the client's perspective, clients take as a given certain quality assurances regarding product preparation. SolArc should undertake and install a QA environment to secure all testing and other sizing related concerns prior to client release. Further, if some SolArc clients are implementing SRA IV into environments the product is not expressly designed for, it is in SolArc's best interest to identify a technical resource who can and will follow the client's particular implementation and report the findings back to the engineering team.	Unknown
	Implementation teams lack knowledge or tools to determine in advance whether there will be network engineering issues at the client sites	Medium	SolArc should convene a short-term project team to comprise a senior engineer and a network engineer to develop an implementation checklist that can be delivered to the client to pre-determine if there may exist technical situations that can prevent successful implementations. The implementation team can deliver the checklist to a designated new client's network engineer or other IT manager to gather the necessary responses and return the checklist to the implementation team for review by the appropriate engineer.	2 weeks engineer + training development team member effort – not a full time commitment
2	**On client concerns of system functionality**			
	• Client IT environments can be complex, and system suitability is partially determined by out of the box functionality without significant customization requirements. • One weak area of the system is forecasting inventory levels and conducting "what-if" scenarios. • PAT does not meet client requirements. • Current product is perceived as not yet mature with too many elements carried from an earlier release.	Medium	It is appropriate for SolArc to continually approach client teams to determine their level of product satisfaction and to return such feedback as possibilities for product enhancement, or to address product challenges with all appropriate team members for follow-on action.	Account Owners should have regular meetings where they follow a protocol to determine level of client satisfaction – effort level is determined by the work required to build the protocol with associated questions, etc.

Documentation Related

Item	Finding	Impact	Recommendation	Level of Effort
1	**On current state of documentation needs**			
	• No documentation for end users currently exists. • Documentation and specifications are lacking. • There is no consistency, set writing style [standard], and QA process. • No naming convention • No revision history • No maintenance and no ownership • No content management • Branding issues exist. • Very little information is reusable. • Estimate that there are approx. 500 documents.	High	SolArc is currently involved with strategies to address the serious current lack of quality reference documentation. However, these efforts may take some time to reach the immediate needs of the training development team. Therefore, it is recommended that the training development team must separately address the needs to create quality documentation to be used for training purposes. Such quality controls must include, but are not limited by, the following: • A training template with a published standards guide • A review and document promotion process • A document naming convention • A document storage plan • A revision history • A document maintenance and ownership plan • Assure product branding are appropriately and correctly addressed	Already addressed with earlier resource estimates for new training development team members
	AO team is currently active in end user documentation development.	High	SolArc must assure that all teams involved with documentation development follow at a minimum the above noted quality controls. A better solution is to standardize on all of these control items across the company.	Unknown
2	**On current SolArc documentation strategy**			
	• Documentation manager is currently developing a Needs Analysis Report for SolArc documentation requirements – this report will target strategies to support documentation management processes for internal and external uses and to support team building. • Need a documentation process to support training and documentation materials development that is directed to other experts than the engineering team.	Medium	It is anticipated that the documentation development strategy will be sufficiently flexible for immediate implementation across the company. It is further anticipated that some of the processes and strategies will be applicable to the training team. The documentation team will need to coordinate with the training team to ensure smooth implementation.	Unknown
3	**On client documentation concerns**			
	• Reference (and training) materials were not very good. • Documentation is not good for users. • Documentation needs to be ready when the software features are ready. • Current documentation/training materials	Medium	SolArc should communicate these findings to all appropriate teams. The most immediate concerns are to correct the perception that existing documentation is “not good for users” (i.e., user-friendly), and that documentation needs to be ready when the software is rolled out to clients.	NA

	do not include what fields (in software app) are required and what are optional.			
	• Client foresees end user support coordinator maintaining set-up tables – this means there must be sufficient documentation for this role. • Client (Premcor) is not planning to create end user documentation; they plan to use Deals and Schedules course materials for documentation needs, plus conducting 1-on-1 coaching.	High	Clients also see the need for better documentation than currently exists to support client coordinators. SolArc should address this at the first possibility: a well-supported client coordinator means better client satisfaction levels. It is expected that training documentation and additional documents (see following bullet) will be sufficient to adequately support this role.	NA
	• Job Aids/Quick Reference Cards could be useful. • Glossary of terms needs to be client oriented, not originated from a SolArc system developer (see interface on drop-down menus etc.).	High	Clients also see the need for job aids/quick reference cards and a glossary of terms. The proposed (earlier in this document) training development team could develop these items as part of their deliverables.	The current estimate for new training developer to build job aids or quick reference cards is 4 hours per instance if SolArc implements a template solution comparable to the RWD InfoPak

Instructional Materials Review

No.	Item	Pass or Return to ISD for Review	Notes
1	Overall Instructional Structure: Does the structure follow a modular approach to support multiple configurations/audience applications? (e.g., Course made of sections. Sections made of topics. Topics are not too general, nor too granular.)	Ok [ ] Not Ok [✓]	Courses have a structure to support the key business area applications. However the structure comprise full topic areas, which tend to make the content very long. This structure could use more modular design with better chunking of topic content.
2	Are there sufficient section review structures to control content flow and audience comprehension checks? (e.g., check your understandings, quick reviews)	Ok [ ] Not Ok [✓]	Generally no use of section content review structures.
3	Are there sufficient section exercise structures to provide authentic practice or employment of newly learned materials? (e.g., conceptual exercises or games, hands-on system practice solving problems)	Ok [✓] Not Ok [ ]	Generally there are exercises for all major topic areas that have system applications.
4	Are the exercises relevant to the audience (are they meaningful and support learning what is important)? (ARCS model)	Ok [✓] Not Ok [✓]	Generally the exercises are relevant. However, they are not role-based enough with a common thread that will help learners connect the way they have done business before to how they will do business in the future using the new system.
5	Is the material, with exercises, designed to gain the audience's confidence of a successful conclusion? (ARCS model)	Ok [✓] Not Ok [✓]	The material structures tend to be long and somewhat tedious, placing an overly large requirement to remember without sufficient review opportunities.
6	Does the learning model include a structured approach based on modern adult learning theories? (e.g., RWD model: Prepare Me, Tell Me, Show	Ok [✓] Not Ok [✓]	Some of the critical elements of an adult learning model are employed in the current design: the Tell Me, Show Me, and some Let Me is provided when appropriate. Need to provide a consistent

	Me, Let Me, Help Me)		structure and include Prepare Me and, if possible, Help Me.
7	Does the applied learning model suitable for the designated instructional delivery strategy? (e.g., Instructor-led, self-paced, virtual classroom eLearning, self-paced eLearning, blended)	Ok [✓] Not Ok [ ]	The current course is completely designed to be instructor-led.
8	Does the material correctly distinguish between Course Objectives and Section/Lesson Objectives Use of correct verbs? (e.g., know, comprehend, learn, understand, apply, build, etc.)	Ok [ ] Not Ok [✓]	Generally no convention used for construction course objectives.
9	Course Objectives: Do they map to sections?	Ok [✓] Not Ok [ ]	No common conventions to the course objectives, but the sections map very well to key topic areas.
10	Course Objectives: Clearly written?	Ok [✓] Not Ok [ ]	Objectives are clearly written.
11	Section Objectives: Use correct verbs? (e.g., recall, describe, identify, match, name, explain, give examples, paraphrase, summarize, apply, create, demonstrate, display, find, logon, logoff, modify, navigate, show, solve, use, etc.)	Ok [ ] Not Ok [✓]	No consistent use of verbs.
12	Section Objectives: Map to slide content? (Check that all slides from the objective slide up to the last slide -but not including since it is always a blank page- map to an objective. If some slides appear, but do not map to an objective, then this check is a fail.)	Ok [ ] Not Ok [ ]	Objectives do not seem to be universally matched against key topics in a 1-to-1 fashion.
13	Section Objectives: Clearly written?	Ok [✓] Not Ok [ ]	Objectives are clearly written.
14	Section Objectives: Conditions and Criteria statements?	Ok [ ] Not Ok [✓]	Objectives are clearly written, but do not follow formal ISD structure of description, condition, and criteria.
15	Exercises (or other activities): Is there some activity that maps to each objective? (Activities can be discussions, breakout groups, exercises, etc.)	Ok [✓] Not Ok [✓]	Exercises are not matched against objectives in a 1-to-1 fashion, but the exercises do fit key targeted skill areas.
16	Content writing - chunking: When bulleting items on a slide, are like items chunked together and some white space separating unlike chunks?	Ok [ ] Not Ok [✓]	Material is presented in MS Word to include a lot of detail. This makes group review difficult and tedious.
17	Content writing - 7±2 rule: Too many bullets on any slide?	Ok [ ] Not Ok [✓]	A lot of material is presented on each content page.
18	Content writing - learning requirements: Are there any slides with information that learners are not required to know? If so, is this content marked to indicate learners are not required to know this?	Ok [✓] Not Ok [ ]	No evidence of this.
19	Content writing - parallel structures: Are parallel sentence structures used in slide content?	Ok [✓] Not Ok [ ]	Generally sound writing structure.
20	Content writing - active voice: Is only active voice used and **not** passive voice?	Ok [✓]	Generally sound writing structure. May have some use of passive voice, but at

		Not Ok [ ]	minimal levels.
21	Useful slide - *What to expect*: Does the Welcome/Opening section include this slide to indicate the training method and structure?	Ok [ ] Not Ok [✓]	This slide is not used.
22	Useful slide - *Your job*: Does the Welcome section include a slide to indicate the importance of dialog, asking questions, and general participation in the course?	Ok [ ] Not Ok [✓]	This slide is not used.
23	Summary and Review: Does the section have this slide (i.e., with the "and Review") and the text cue to see if everyone can fulfill the objectives?	Ok [ ] Not Ok [✓]	This slide is not used.
24	Bridge to the next lesson: Does each section have this slide and does the text cover what was covered and what is next?	Ok [ ] Not Ok [✓]	This slide is not used.
	Results	**8 OK** **12 Not OK** **4 Both** **1 unmarked**	**This is an excellent score for a designer who does not have the detailed education or experience in instructional systems design and modern learning theories.**

Evaluation Forms – Statistical Analysis

The analysis team built a specialized statistical analysis tool in MS Excel to study the learner feedback from two course evaluations developed by SolArc. Most of the metrics, with the exception of Participants, had a score range of 0 to 5 with the larger number indicating greater levels of satisfaction; the Participants score had a range of 0 to 2, also with the larger number indicating greater levels of satisfaction. The analysis generated the mode, average, and standard deviation in all of the metrics, from an item analysis level to the metric area level that comprises multiple items. The results are follow.

Targeted Metric	Mode	Average	Std Dev	Notes
Deals Course				
Training Facilities	4	4.085	0.689	
Training	4	3.705	1.266	
Instructor	4	4.25	0.622	
Participants	2	1.89	0.407	
Accounting Course				
Training Facilities	4	4.056	0.66	
Training	4	3.982	0.629	
Instructor	4	4.25	0.63	
Participants	2	1.886	0.401	

An item analysis of the elements to the above metrics is available for review in an Excel spreadsheet.

Interpretation: The above findings largely show learner satisfaction with the training program. The weak areas are the “Training” metric: the average is generally lower, and there is a greater spread in user responses, as evidenced by the larger standard deviation.

Finding: The general data above, and the item analysis that can be reviewed in the Excel spreadsheet, support the detailed findings previously recorded in the subsection titled Training Related. The training materials should be enhanced and designed using standardized instructional design principles and adult learning theories.

A copy of the evaluation form is included in the following appendix.

Appendix – SolArc Training Evaluation Form

The following is the Kirkpatrick level 1 evaluation form the SolArc Training Manager used to derive feedback from course participants. Included in this form for purposes of adhering to a strict analysis process are the valuation numbers necessary to encode the feedback for a statistical treatment. The original participant forms are in the care of the Training Manager and have been appropriately tagged in pencil to identify which evaluation run each form belongs to, as well as each form is numbered in case a data review should prove necessary. In one area, the analysis team added "NA" for Not Applicable or No Answer to the electronic recording in the event a learner participant did not answer the question.

Course and Instructor Evaluation Form

Course _____ **Instructor**_____
Date_____**Facility**_____

Training facility:

Effectiveness of the training site for comfort:

Excellent ___	Good ___	Fair ___	Poor ___	Unacceptable ___	Not Applicable
5	4	3	2	1	0

Effectiveness of the training site for accessibility:

Excellent ___ Good ___ Fair ___ Poor ___ Unacceptable ___ Not Applicable

Effectiveness of the training site as a training forum:

Excellent ___ Good ___ Fair ___ Poor ___ Unacceptable ___ Not Applicable

Quality of the training equipment for efficiency:

Excellent ___ Good ___ Fair ___ Poor ___ Unacceptable ___ Not Applicable

Level of error-free operation of the training equipment:

Excellent ___ Good ___ Fair ___ Poor ___ Unacceptable ___ Not Applicable

Speed of the equipment used for training:

Excellent ___ Good ___ Fair ___ Poor ___ Unacceptable ___ Not Applicable

Timely coordination for delivery of the training service:
Excellent ___ Good ___ Fair ___ Poor ___ Unacceptable ___ Not Applicable

Organization of training workshop :
Excellent ___ Good ___ Fair ___ Poor ___ Unacceptable ___ Not Applicable

Courtesy and timeliness of training manager:
Excellent ___ Good ___ Fair ___ Poor ___ Unacceptable ___ Not Applicable

Training:

Usefulness of curriculum:
Excellent ___ Good ___ Fair ___ Poor ___ Unacceptable ___ Not Applicable

Relevance of curriculum:
Excellent ___ Good ___ Fair ___ Poor ___ Unacceptable ___ Not Applicable

Ease of learning of curriculum:
Excellent ___ Good ___ Fair ___ Poor ___ Unacceptable ___ Not Applicable

Relation of training to my job:
Excellent ___ Good ___ Fair ___ Poor ___ Unacceptable ___ Not Applicable

Quality of materials:
Excellent ___ Good ___ Fair ___ Poor ___ Unacceptable ___ Not Applicable

Reading ease:
Excellent ___ Good ___ Fair ___ Poor ___ Unacceptable ___ Not Applicable

Match of curriculum to software:
Excellent ___ Good ___ Fair ___ Poor ___ Unacceptable ___ Not Applicable

The Objectives for this class were clearly explained.

Strongly Agree ___	Agree ___	Don't Know ___	Disagree ___	Strongly Disagree___	[NA]
5	4	3	2	1	0

The information was presented in a logical and understandable manner.
Strongly Agree ___ Agree ___ Don't Know ___ Disagree ___ Strongly Disagree___

The documentation was helpful.

Strongly Agree ___ Agree ___ Don't Know ___ Disagree ___ Strongly Disagree___

I understand the functions and purposes of the processes covered in the training class.
Strongly Agree ___ Agree ___ Don't Know ___ Disagree ___ Strongly Disagree___

The class should cover more material.
Strongly Agree ___ Agree ___ Don't Know ___ Disagree ___ Strongly Disagree___

Instructor:

Instructor timeliness:

Excellent ___	Good ___	Fair ___	Poor ___	Unacceptable ___	Not Applicable
5	4	3	2	1	0

Instructor subject knowledge:
Excellent ___ Good ___ Fair ___ Poor ___ Unacceptable ___ Not Applicable

Instructor communication skills:
Excellent ___ Good ___ Fair ___ Poor ___ Unacceptable ___ Not Applicable

Instructor training preparation:
Excellent ___ Good ___ Fair ___ Poor ___ Unacceptable ___ Not Applicable

Participant:

Did you attend all the sessions? Y N [NA]
2 1 0

Did the tutorials and handouts help you learn the materials? Y N

Is this the first time you learned the materials? Y N

Would you recommend this workshop to others? Y N

Was there help available when you needed it during the hands-on session? Y N

Was the instructor/assistant available to answer questions? Y N

Was the hands-on session long enough? Y N

Additional Comments:

1. What did you enjoy about the class?

_____

2. What could be improved about the Courses?

_____

3. What did you like most about the Courses?

_____

4. What did you like least about the Courses?

_____

5. Suggestions on Course content?

_____

6. Suggestions on Exercises?

_____

7. What could be improved about the training manuals?

_____