



Chapter 2: eLearning Basics

Unit 2.1: Building a Successful eLearning Program

The design, creation and implementation of corporate training solutions, especially those that are highly reliant on technology, are very complex projects with many aspects to consider. The objective of this module is to provide guidance related to the planning of e-learning solutions as well as to present a survey of the many instructional and technological building blocks that should be considered as part of your solution. Skillfully blending these elements will ultimately give you the most effective training and the best results.

The most important components of success....

Successful corporate training solutions can vary; however, they all have some common elements that make them successful. The most important components of success are the following:

- A sound plan with a well-defined mission and well-formulated objectives
- Appropriate technological infrastructure and implementation strategy
- Good course design that contains well-written and engaging content

A good plan is the starting point...

A good plan is the starting point. Like any corporate initiative, the training program should have a stated mission and a set of business objectives that are well defined. The plan will also need to include a business analysis that identifies the costs and benefits of the training program. This will help bring the project into focus and provide solid grounding on which your many decisions will be based.

Once the big picture is in focus, it is time to create the implementation strategy and plan. This will start with a thorough assessment of many aspects, including considerations such as specific training needs, current and planned technology, corporate culture and trainee demographics. Your complete implementation plan will include a proposed curriculum and a description of training methods along with a delivery infrastructure.

Ultimately, a good plan and implementation strategy is meaningless if the courses and training content are not properly designed or are ineffective. A sound design process begins with a thorough analysis of the training needs and a determination of the learning objectives. The next step is to design the instruction necessary to accomplish the teaching objectives and create an assessment structure to ensure that the objectives have been met. It is also important to realize that despite a thorough analysis and well-formulated learning objectives, the quality of the instructional content is still critical. The instructional content must be relevant to the student and presented in a way that is engaging and memorable. The use of interactive multimedia, if well done, can make the instruction much more interesting and effective.

Unit 2.2: Strategies of eLearning

Training solutions can range from being focused on a specific problem to being very broad, touching many aspects of a company's operation. Regardless, before you design and implement your training solution, you need to do some planning.

The initial plan includes a basic top down analysis that identifies the key elements of a sound and successful training program. It is critically important to understand that your training solution is ultimately a solution to help achieve business goals. For example, your ultimate goal is to increase sales, raise the level of customer service, reduce manufacturing costs because of human error, or increase the morale of employees and their overall well-being. Therefore, to ensure your training solution is successful, you must define it and plan for it much like any other business project. Finally, the training solution must be economically viable and the desired outcome clearly defined so that the benefits can be continually evaluated.

2.2.1: Identify and Define the Business Goals

The fundamental business goal(s) must be clearly identified. This critically important basic step is the driving force behind the training. All training ultimately maps back to achieving specific business goals and solving business problems. It is a very good idea to document these objectives in a mission statement that can be reviewed and approved by the project stakeholders.

...at least part of the solution involves a change in human behavior...

2.2.2: Develop a Solution to the Problem

Presumably, an analysis of the business goal or problem indicates that at least part of the solution involves a change in human behavior or performance. Developing a training solution to address these issues requires specifying the details of the training needed to bring about the desired changes.

The training should be defined in terms of its desired outcome, specific objectives and necessary content. Also, remember that training, regardless of how well it is designed, is not effective unless the employees are properly motivated to participate. Part of the solution should therefore include the proper communications to motivate and engage the trainees. Motivation is also a key element that should be considered in the design of the instructional content.

2.2.3: Develop a Strategy for Implementing the Solution

Given the general scope and objectives of the training, an implementation strategy needs to be developed. The implementation strategy includes two fundamental components: (1) a curriculum based on the identified training needs and (2) an infrastructure and delivery plan that includes identifying all training and information delivery methods and technology.

The implementation strategy will likely be a phased plan requiring evaluation and refinement. Additionally, the plan should identify the implementation team and its responsibilities. Good strategies strive for early measurable success, are flexible and scalable and consider the corporate culture and politics of the situation.

The strategy includes two fundamental components...

2.2.4: Prepare a Business Case for the Training Program

After a training solution to a business goal has been identified and an implementation strategy developed, you must analyze its economic viability. This translates to quantifying the costs and the benefits of the training. This analysis, both initial and ongoing, is the fuel that drives the training initiative.

With a well-defined implementation strategy, the investment or expense side of the equation is usually straightforward. The problem is that, initially, the scope and many of the details of the implementation strategy are not defined precisely enough to give you an accurate development cost. This may warrant an investment in the preparation of a detailed implementation plan. This process is equivalent to hiring an architect to design the house and develop a detailed set of blueprints. Once you have this detailed implementation plan, you should be in a position to accurately estimate the development cost and project schedules. Estimating ongoing costs for new courses, maintenance, updates and new technology is important.

Sometimes, the benefit is a clear cost savings or gained efficiency.

The other side of the equation is quantifying the benefits. This process is more complex and should include both the direct and indirect benefits of the training program. Sometimes, the benefit is a clear cost savings or gained efficiency. Other times, benefits can be based on new capabilities. The indirect benefits are much harder to quantify and may include such things as improved employee morale and well-being.

2.2.5: Develop a Set of Metrics

Metrics are measurable performance parameters that can be used as feedback to evaluate the training results, to help refine the implementation strategy and to keep the training initiatives on track. Training solutions need to be constantly evaluated and refined. Make sure that the metrics are closely correlated to the fundamental business goals that are being addressed.

Unit 2.3: Project Management

The above plan is a starting point that ensures that the business objectives have been properly stated, a solution has been identified and a business case for that solution has been presented and approved. The next step is to create a detailed project plan for the design and implementation of the solution.

You have many important decisions that need to be made, ranging from issues related to the use of technology to required facilities to instructional design to software development and media production.

For this reason, training projects and specifically e-learning projects are inherently complex and require the integration and coordination of many different disciplines. It is important that the project manager be aware of the many facets to these projects and understand the interrelationships of all of the required tasks.

A typical eLearning project team includes the following types of professionals who must work together for the common goal:

**A typical
eLearning
project team...**

- Project managers
- Instructional designers and technical writers
- Subject matter experts
- IT professionals including network engineers, software developers, database engineers and technical support staff
- Facilities personnel
- Multimedia developers, including graphics production specialists, multimedia programmers, computer animators and video/audio production personnel
- Art director, graphic designers and interface designers
- Quality control and assurance personnel

eLearning projects are complex and need to be broken down into logical phases or subprojects. Each phase results in a deliverable to the client and is a transition point to the next phase. These deliverables are critical and must be carefully evaluated by the project team and client. They must be approved before moving on to the next phase.

Unit 2.4: Analysis, Design and Development

2.4.1: Analysis

The objective of this phase is to gain a complete understanding of the goals and constraints of your training project. The analysis phase requires the gathering of many different types of information. The deliverable of this phase is the Analysis Report and may include one or more of the following:

- Audience/Needs analysis
- Environmental (hardware, software, bandwidth, etc.) analysis
- Content analysis
- Task analysis
- Problem/Risk analysis

The analysis phase provides the information you need to properly define the scope of the training and will be the primary input into the design phase.

2.4.2: Design

The design phase considers all that has been learned in the analysis phase and creates a total solution that meets the training requirements. The design process addresses all of the instructional needs as well as the infrastructure and technical requirements. The design phase usually consists of several sub-phases that allow for progressive refinement. This phase is very important because it allows the designers to take a top-

down approach and get approval by the project sponsors before moving into more detail. This phased design approach helps keep the project on target and minimizes the potential for mistakes and rework. The deliverables of the design phase typically include the following:

Deliverables of the design phase typically include the following...

- ❑ Design Document – This identifies objectives and goals, instructional approach, implementation strategies, detailed curriculum and content outlines for all instruction and establishes design standards.
- ❑ Storyboards – These are a screen-by-screen treatment of the instructional content. Storyboards include all of the text content that appears on screen, all audio narrative and the identification and description of all multimedia content and interactivity for the instruction.
- ❑ Functional Design Specification (for software applications) – For computer and Web-based training delivery, the solution may frequently include the development or modification of software applications. The design of this software is usually addressed separately from the training content. This document defines all of the applications functionality, user interface, system interfaces, and data formats.
- ❑ Prototypes – These occur after the paper design but before the programming or production phase is started. Prototypes are a very useful way to mock up the software interface and typical instructional content to allow the design team and project sponsors a way to evaluate how the training and software application is going to look and work. Evaluation of the prototype frequently reveals

subtle but necessary design changes that were not apparent in the paper-design documents.

2.4.3: Training Content Development

This phase includes graphic, video, audio and multimedia production. The production team will use the storyboards to create all of the content that makes up the instruction. Because this is a labor-intensive and expensive part of the job, it is critical that the storyboards be carefully reviewed and approved by the client.

2.4.4: Software Development

Using the software functional specification document and the prototype, the programmers create the training software application. Like the content production phase, this phase also includes a lot of work and thus it is critical that the design documents and prototype have been carefully reviewed and approved by the client.

...it is critical that the storyboards be carefully reviewed and approved by the client

Unit 2.5: Implementation and Evaluation

2.5.1: Implementation

After the production is complete and the training system is finished, the implementation phase addresses the details with final delivery, installation and the final testing/ acceptance by the client.

In some cases this final phase can be very involved and require a lot of interaction with the

...issues surrounding transition of ownership and control...

IT personnel so that the software can be installed, configured and properly tested. This is especially true for Web-based applications that are to be installed on the client's Web server.

In addition to the issues involved with the deployment of the technology and the acceptance by the client, there are also issues surrounding transition of ownership and control. For example, it is important that proper training and documentation exist. Depending on the training system, ongoing technical support should also be considered and planned for.

2.5.2: Evaluation

Although evaluation is a very important part of the design process, it must also be continued after the training is in use. This evaluation can determine if the objectives of the training have been met. Evaluation can drive the continuous improvement of the training for better and better results.

Unit 2.6: Instructional and Technological Building Blocks

You have many options with regard to developing and delivering your training solutions. Each option has its strengths and weaknesses and must be strategically used to optimally achieve your goals. Typically, a blended approach works best, where you can combine a variety of techniques to get the most effective training. For example, traditional instructor-led training is still one of the most successful methods of teaching, but it has drawbacks. It requires physical classrooms and everyone must gather in one place at one time.

...options with regard to developing and delivering your training solutions...

For a company with a national or worldwide workforce, this can be a time-consuming and expensive proposition. On the other hand, there is a lot of benefit in getting your people together and perhaps the training is being combined with other efforts that require physical presence. The optimum solution may then be to reduce the required instructor-led training through the use of on-line (asynchronous) prep courses. This solution could result in more effective training at less expense.

Another issue you might face is how to handle the spontaneous training needs of a distributed workforce; for example, getting new product information and training out to a large distributed sales force. A viable solution might be on-line, live (synchronous) instructor-led training combined with an easily updateable on-line reference library of sales support material and current promotional materials.

The possible combinations are endless and must be crafted together to give you the best overall solution for your situation. The following descriptions of the fundamental instructional and infrastructure components are the building blocks that can be used to implement your training solutions. Your business needs and environment ultimately dictate the details of how these techniques are combined and used.

Unit 2.7: Training Techniques

2.7.1: Instructor-Led Classroom Training

A bottleneck?

The traditional approach to training, instructor-led classroom training, is still one of the most effective ways to teach. Studies show that instructor-

led training routinely outperforms other methods. Unfortunately, instructor-led training has some practical limitations related to the cost of employee downtime, travel expenses and training facility costs. Another serious drawback to instructor-led classroom training is the limited “training bandwidth” that can be achieved. If you have a situation where you need to train many people relatively quickly, the instructor classroom model may become a bottleneck.

2.7.2: Traditional Training Media

Print and video training materials are the core assets of many traditional training programs. They have the advantages of being very portable and familiar to people. On the other hand, they have disadvantages related to their duplication and distribution expenses as well as being inherently difficult to update and maintain. Once printed materials or videotapes have been distributed, they cannot be easily changed and must frequently be reprinted and distributed.

2.7.3: Synchronous eLearning

This method allows an instructor and students to participate in an on-line virtual classroom. It is called synchronous because it is a live event where everyone logs into the Web-based virtual class at a specific time. The training sessions emulate the traditional classroom approach in that an instructor controls the delivery of content and students have opportunities to ask questions or engage in discussions. Usually, the instructor can deliver just about any type of Web-based content along with his/her voice. These systems typically have collaboration tools, such as whiteboard functionality and application sharing capabilities.

The training sessions emulate the traditional classroom approach...

The whiteboard functionality is very much like a traditional chalkboard. The instructor can draw on it or type in text. The instructor can also load in previously prepared graphics, annotate them and allow students to control the whiteboard.

The application sharing is very useful for collaborative discussion of a document or other electronic media or for demonstrating how certain software programs work.

Most synchronous eLearning systems also provide methods for the instructor to implement assessments or gather feedback from the students by either receiving messages or polling.

The strength of synchronous eLearning systems is...

The strength of synchronous eLearning systems is that they are a natural extension of traditional classroom training. This means that training that is currently delivered by traditional methods can fairly quickly be adapted for the on-line version. The repurposing of existing training material can usually be done quickly and efficiently. Like traditional training, the instructor can control the pace and direction of the instruction based on feedback and interactions from the students. Also, like a classroom, questions can be answered as they arise and the instructor can promote discussions. Synchronous eLearning maintains many of the positive attributes of traditional instructor-led training while reducing cost and making training more convenient. A group of people can convene on-line to take a course without being co-located. This means no travel costs, a minimum of employee down time and no facility expenses.

Including video as part of the synchronous eLearning environment is also possible. Video can come in two forms. The first type is prerecorded video, which can be delivered by using video

streaming technology. This is relatively straightforward and, assuming the network bandwidth is available, can be integrated into most systems just like any other Web-based content. The second type is live video and is more complicated to implement. Live video requires cameras and the necessary hardware and software to compress, encode and transmit a live video signal.

More traditional video conferencing systems have been available for many years and provide a convenient alternative to face-to-face meetings. However, many of these systems were not designed to be eLearning platforms and therefore lack many of the needs associated with the delivery of corporate training. However, a company that already has a video conferencing capability should factor it into the plan for implementing the corporate training program.

Drawbacks to synchronous eLearning...

The drawbacks to synchronous eLearning are similar to traditional instructor-led training in that it still requires everyone to meet at a specific time and thus lacks the flexibility to accommodate different and conflicting schedules. Synchronous eLearning can also place extra demands on the instructor. He/she must become familiar and comfortable with the delivery tools (although many solutions include meeting facilitators that handle the technology) and must adapt to teaching when he/she is not in the same room with the students.

2.7.4: Asynchronous eLearning

Asynchronous eLearning includes courses and training materials that can be accessed by the student at any time. It is self-paced and typically independent from an instructor or other students.

However, many good asynchronous courses do provide access to forums and threaded discussion groups to give the student the ability to ask questions or have discussions.

This independence from the instructor and classroom environment can be a great convenience to the student because the course can be taken any time and at a pace controlled completely by the student. This, however, puts additional demands and requirements on the asynchronous training content, as it is responsible for 100% of the training and must keep the student engaged. Consequently, asynchronous courses take more planning and are more difficult to create than synchronous courses. The advantage of an asynchronous course is that, once created, it can be deployed at a very large scale and become completely automated. For this reason, asynchronous courses are usually best suited for situations where the audience is large and dispersed.

An important part of learning is...

2.7.5: Simulations

Simulation training methods, a subset of asynchronous training, teach by presenting the trainee with real-world scenarios and allow them to practice procedures or solve problems by making decisions and interacting with the simulation software. A very important part of learning is applying and practicing new knowledge. Simulations provide a safe, controlled and convenient way to practice these newly acquired skills and can be an effective assessment tool to find out if new information and skills are being properly applied.

Below is a sample of an eLearning simulation created with Adobe Captivate. Click the Technical Communications logo to start the simulation.



Simulation training software was classically used to model physical processes and equipment interfaces, such as airplane simulators. These types of simulators are effective ways to train operators on using equipment by allowing them to practice in a safe and controlled environment. Additionally, an instructor can simulate problem scenarios that can teach users how to overcome adverse situations that, in real life, may be either very dangerous or expensive when mistakes are made. Today, however, the term simulation is frequently extended to describe any training software that “simulates” a scenario or problem and gives the user a way to make decisions to create a desired outcome. For example, simulations can also be

Simulations must replicate the desired scenario...

used to teach soft skills, such as closing a sale, using management skills and, for attorneys, to cross examining a witness.

For simulations to be effective, however, they must adequately replicate the desired scenario and give the user enough options and interactivity to provide realistic and effective practice. This gets harder to do as the training scenarios become more complicated and the necessary user actions and skills diverge from what can be translated to a computer interface.

Simulations almost always need to be combined with other methods of training to teach all the prerequisite skills. Simulation is a valuable teaching method because it allows users to apply what they have been taught and experience the application of this knowledge. For example, simulation is effective right after a lesson that has taught basic skills. It is also important that the simulation has teaching resources built into it. For example, the simulation should have the ability for the user to access a hint or help system, access reference materials or even jump back to other lessons. In this way, knowledge gaps that are realized by the user can immediately be filled. This bidirectional back-and-forth process of applying learned knowledge and then discovering knowledge gaps and seeking the information that is needed, is a very powerful way of teaching.

Training simulations usually require more computing resources...

Implementing training simulations usually require more computing resources than your typical training software. Because you are always trying to mimic a realistic work situation, it is usually desirable to include multimedia and visually rich environments and interfaces. Because you are trying to create a highly interactive environment, the

simulation will necessitate a more sophisticated user interface. Because simulations frequently need to perform many calculations and are tracking a multitude of variables, they can be more computationally intensive than most training applications. For these reasons, training simulations were historically run on multimedia enabled PCs or workstations. Today, because of increased bandwidth and Web programming tools such as Adobe Flash, it is possible to implement many training simulations on the Web.

Unit 2.8: Management Systems

2.8.1: Learning Management Systems

A Learning Management System (LMS) provides all of the administrative functionality behind a Web-based training system. An LMS can range greatly in its capabilities and specific features but, basically, it handles all issues related to providing access to the content, delivery of the content and student performance tracking/reporting. This translates to capabilities such as the following:

- Student registration and course access
- Assigning instructional responsibilities and access
- Course setup and curriculum planning
- Delivery of tests/assessment
- Tracking and reporting of student progress and performance
- Providing certifications and regulatory compliance reports

**LMS can
or should be
able to...**

Some LMSs also include capabilities such as course authoring tools that may allow instructors to load their course content or assessments into the system. This type of capability is usually more commonly delivered through a content management system.

Note that an LMS is used not only for computer delivered content, but also for some traditional training. The LMS can or should be able to record an employee's entire training history including live training events. Some systems also manage the use of training resources, such as meeting rooms and presentation equipment.

The LMS can be a very important part of a system, especially if the training program is large and has many students and many courses that need to be managed. Originally, an LMS was complex and therefore expensive and time-consuming to implement. However, more recently many basic LMSs are available at costs much less expensive than their predecessors.

2.8.2: Learning Content Management Systems

The Learning Content Management System (LCMS) is another core piece of the training system infrastructure. The previously described LMS provides all of the administrative and delivery functionality while the LCMS provides capabilities more directly related to the authoring, storing and managing the content. The LCMS make the following possible:

- More easily enter, update and edit the training content

Capabilities more directly related to the authoring, storing and managing the content...

- ❑ Centralize the storage and management of content
- ❑ Facilitate a workflow process related to the authoring, reviewing and approving of training content

The fundamental concept behind a LCMS is the separation of the content from the presentation of the content. The raw content is stored in a database where it can be accessed independently of the presentation. This independence opens up many possibilities. First, the content can now be entered into the database by an authoring application, which allows someone to easily enter or edit the content without being involved in the details of how to implement the presentation. Second, the content can be used or presented in a variety of ways or media. A perfect example of this is content that is going to be used for both an asynchronously delivered on-line course and a printed manual. The two media are quite dissimilar and the information needs to be presented and formatted differently in each case. The LCMS makes it possible to easily update the content in a single place. The different presentations that access the content are then automatically kept current.

2.8.3: Knowledge Management Systems

Knowledge management within an organization is defined in two parts. First, it is the systematic process of finding, selecting, organizing, distilling, and presenting information. Second, employees and managers must use that knowledge for things such things as problem solving, dynamic learning, strategic planning and decision making.

**Knowledge
Attrition...**

A common problem is “knowledge attrition.” People leave an organization and the valuable information goes with them. To preserve and grow knowledge within an organization, a cultural bias must exist which, at the very least, promotes the transfer of knowledge from one person to another. In large organizations, cultural bias is not a practical Knowledge Management System, because this method does not necessarily span geographical and political boundaries.

Enter technology. A technology-based Knowledge Management System helps to transcend geographical boundaries and to centralize the knowledge of an organization. Technology solutions must be evaluated for compatibility with an organization’s culture, objectives and existing or planned systems.

2.8.4: Performance Support Systems

Electronic Performance Support Systems (EPSS) are computer programs that are structured to provide immediate individualized access to information, software, assistance, data, images and tools required to perform one’s job. They support the concept of just-in-time training. They are, by their nature, typically focused on defined tasks or processes.

**Complement
the training...**

An EPSS can be very useful to complement training, especially when used as job aids to provide step-by-step procedures that explain, demonstrate and show users how to perform complex tasks. An EPSS can minimize classroom time and can serve as a valuable reference tool after training is completed. It can also empower an employee to perform tasks with a minimum

amount of external intervention, resulting in an increase in general productivity.

Unit 2.9: Open Standards

Standards are important to the extent that systems need to be interoperable, easily maintained and scalable. There are two basic standards issues. First, the programming languages, databases and other technology must be consistent with the rest of the information technology. These integration issues affect, for example, an IT staff's ability to maintain and scale the system.

Second, the issue regarding the development of course content for an eLearning system must be addressed. For example, different groups such as the Aircraft Industry CBT Committee (AICC), Institute of Electrical and Electronics Engineers (IEEE), IMS Global Learning Consortium and the Advanced Distributed Learning Initiative (ADL) have developed specifications for the packaging and delivery of training content so that it is more independent and transportable. This promotes greater flexibility and reusability of the course content.

The Sharable Content Object Reference Model (SCORM) is an evolving set of guidelines and specifications developed by the ADL that is becoming a widely accepted standard. SCORM compliant courses are designed to be the following:

- Reusable – easily modified and reused for other training efforts
- Accessible – made widely available to a general audience

- ❑ Interoperable – less dependant on specific hardware and software platforms
- ❑ Durable – upwardly compatible with new versions of system software

The SCORM specification has three main components. The first is a set of course packaging requirements. This defines all the course content resources and navigation. The second is a set of run-time requirements that define how the course must communicate with the LMS. The third is a specification for course and student meta- data. The course meta-data is a formatted description of the course and its content, and the student meta-data is a description of the specific student data that can be tracked by the LMS.

Unit 2.10: Course Design and Content

Ultimately, the most important element of your training program is the courses and their content. Some deficiencies can be worked around or compensated for, but poorly designed courses that do not meet their objectives, or content that does not effectively teach, will negate all of your efforts.

Your training needs can roughly be divided into categories...

First, it is helpful to realize that your training needs can roughly be divided into two categories: “off-the-shelf” and customized. Some training is universal and can be purchased as “off-the-shelf” training. For common training needs, such as learning popular software applications, basic IT training or common soft skills, the demand is high enough to warrant their development. Using off-the-shelf training is less expensive and quicker than developing customized courses.

**...a very
methodical
approach...**

Training that is unique to your specific needs must be customized. If you need to develop your own training, you need a team that consists of subject matter experts, instructional designers, content developers and the appropriate programming and integration talent.

Course design and the creation of effective content is a subject that goes beyond the scope of this module, although there are fundamental elements that can help guide the way. The Instructional System Design (ISD) process is a commonly used method to develop corporate training. ISD is a learner-centered approach that is driven by the needs of the learner, as opposed to the instructor or institution. It is also characterized by a very methodical approach that determines the specific learning objectives of the training and designs the training around achieving those objectives. It also acknowledges that the design is an iterative process that should incorporate evaluation and feedback to refine the instruction. The following are the key phases to this approach:

- Analysis
- Design
- Development
- Evaluation

2.10.1: Analysis Phase

The analysis phase identifies the training needs of the learner by defining the desired outcome along with the learner's current state of knowledge, skills and attitude. The analysis phase allows you

to define the overall scope of the training in terms of necessary content and the amount of instruction.

2.10.2: The Design Phase

The design phase first considers the needs identified in the analysis phase and then develops a specific set of learning objectives. The instruction content and sequencing is designed to best accomplish the learning objectives.

2.10.3: The Development Phase

The development phase is the creation of the learning content.

2.10.4: The Evaluation Phase

The evaluation phase is used to collect feedback and assess whether or not the desired learning outcomes are being achieved. If not, then the feedback is used to refine the instruction.

The development and deployment of a corporate eLearning system can appear to be a risky and daunting task. However, the risk can be minimized by developing and following an implementation plan that takes this large and complex task and breaks it down into a methodical step-by-step process.