VITAL LEARNING
INTERACTIVE COURSEWARE PROPOSAL

SUPERVISION SERIES:
DEALING WITH COMPLAINTS
OFFICE MODEL

(3-1-95)

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1.0 PROTOTYPE DEVELOPMENT

1.1 PROBLEM STATEMENT

PURPOSE

The purpose of this project is to take one segment of the **Supervision Series: Dealing with Complaints** seminar, and convert it to an interactive, self-paced, CD based, training format.

GOALS

There are several primary goals for this project:

1. Establish the cost and scope of work for converting the rest of this course, and the approximate cost and scope of work for converting other courses in Vital Learning's training libraries.

2. Design an interactive version of the selected course segment without the need to script and produce new video—the existing video is to be repurposed.

3. Demonstrate the use and effectiveness of CD based, multimedia courseware.

PROBLEM

The primary problem we see in this project is effectively replacing the functions performed by the current in-class trainers.

Going through the material supplied for our review, it was clear that this program closely fits our model for experiential learning.[1] It is a very well designed seminar program.

However, the success of this course is based almost entirely upon the personal interaction and group dynamics created between the trainers and their students. Remove this interaction and group dynamics, and you remove the bulk of the student's learning experiences.

This dependence is at once the program's greatest strength, and it's greatest weakness. In the hands of an ineffective or incompetent trainer, this course would fail to achieve an acceptable level of impact or performance change with its student.

1.2 RECOMMENDED SOLUTION

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[1] Please refer to the interactive design material presented in section 1.4, "Basis for Interactive ISD Approach."

One of the most important capabilities of interactive technology systems is their ability to effectively replace the functions of live instructors—and to do so with a much higher level of teaching consistency.[2]

However, to replace the trainer, the structure of the program must change. In the following sections, we will lay out a suggested restructuring of the existing material that effectively replaces this program's trainer functions. Nearly all aspects of the existing course design will be preserved. This restructuring requires the production of no new video, yet should equal or exceed the impact of the existing program.

APPLICATION DESIGN

What we have done, is prepare a narrative description of an interactive version of the segment selected by Vital Learning for conversion. This segment covers pages 21 through 39 in the Supervision Series Facilitator Guide.

A diagram on the following page presents flow diagrams of the existing, seminar-based segment...and the proposed, CD-i-based segment. You may refer to these diagrams as we step through the narrative description.

Step 1: Introduction, and

Step 2: Preworkshop Activities

In converting this program to an interactive format, we see no need to change any portion of Steps 1 and 2. The learners would still need to be provided with an introduction to the program, its objectives, and a rational for what's in it for them. In addition, they would receive the student workbook with instructions for performing the preworkshop exercises.

It may be necessary to make minor changes to the text contained in this material to account for the program's interactive delivery (e.g. eliminating references to the trainer.)

Step 3: Preworkshop Exercise Review

The first visible change to the segment's structure is that step 3 is now a separate activity. This review of the preworkshop exercises becomes an option item on the course's main menu (figure 1). But, before looking
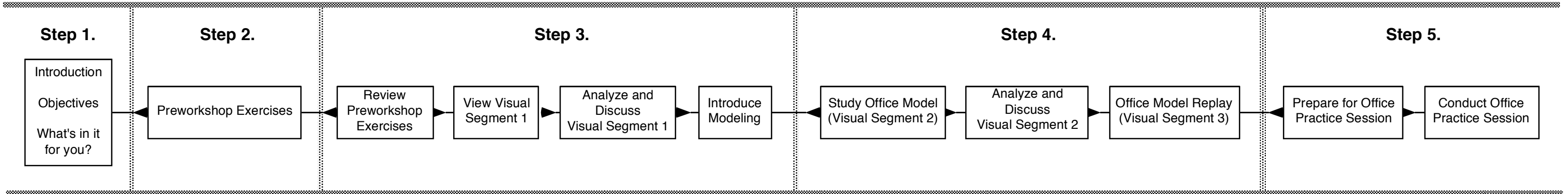
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[2] Please refer to research data presented in section 1.4, "Basis for Interactive ISD Approach."
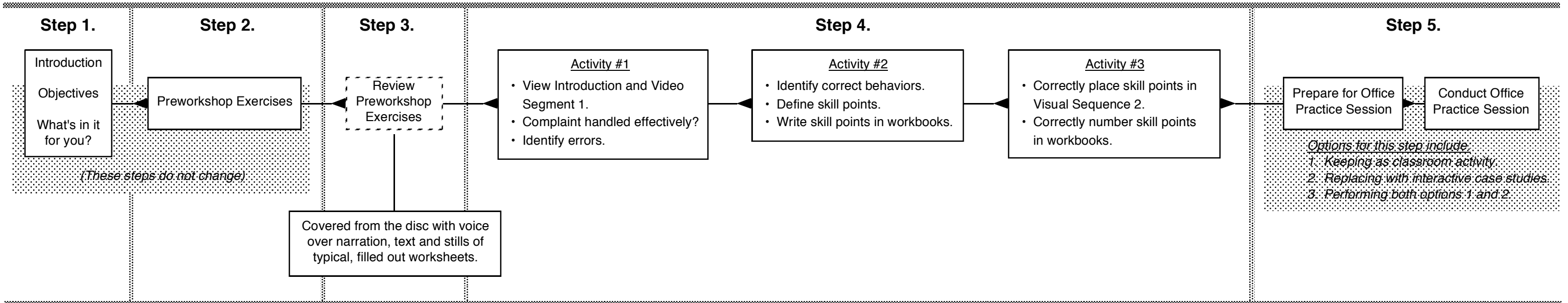
Design Overview

Supervision Series: Dealing With Customers
Office Model

Existing, Seminar-Based Program

Step 1.	Step 2.	Step 3.				Step 4.			Step 5.	
Introduction Objectives What's in it for you?	Preworkshop Exercises	Review Preworkshop Exercises	View Visual Segment 1	Analyze and Discuss Visual Segment 1	Introduce Modeling	Study Office Model (Visual Segment 2)	Analyze and Discuss Visual Segment 2	Office Model Replay (Visual Segment 3)	Prepare for Office Practice Session	Conduct Office Practice Session

Proposed, CD-i-Based Program

Step 1.	Step 2.	Step 3.	Step 4.			Step 5.	
Introduction Objectives What's in it for you?	Preworkshop Exercises	Review Preworkshop Exercises	**Activity #1** • View Introduction and Video Segment 1. • Complaint handled effectively? • Identify errors.	**Activity #2** • Identify correct behaviors. • Define skill points. • Write skill points in workbooks.	**Activity #3** • Correctly place skill points in Visual Sequence 2. • Correctly number skill points in workbooks.	Prepare for Office Practice Session	Conduct Office Practice Session

(These steps do not change)

Covered from the disc with voice over narration, text and stills of typical, filled out worksheets.

Options for this step include:
1. Keeping as classroom activity.
2. Replacing with interactive case studies.
*3. Performing both options 1 and 2.*

at the design of this review, it's important to understand how learners will enter this course.

After completing the preworkshop activities, the learner would report to the training center to take the course (wherever the CD-i equipment is set up for training.) The learner would log onto the training system by entering their name and employee number.

This data, along with all performance and test scores, would be stored on the system for later access. The CD-i 220DV player we recommend for this application is capable of permanently storing up to 300 students' worth of data before uploading would be required. This data may be either formatted and sent to a printer, or sent to a PC via the RS232 serial port on the back of the player. We can provide more detailed information on this capability later.

Figure 1
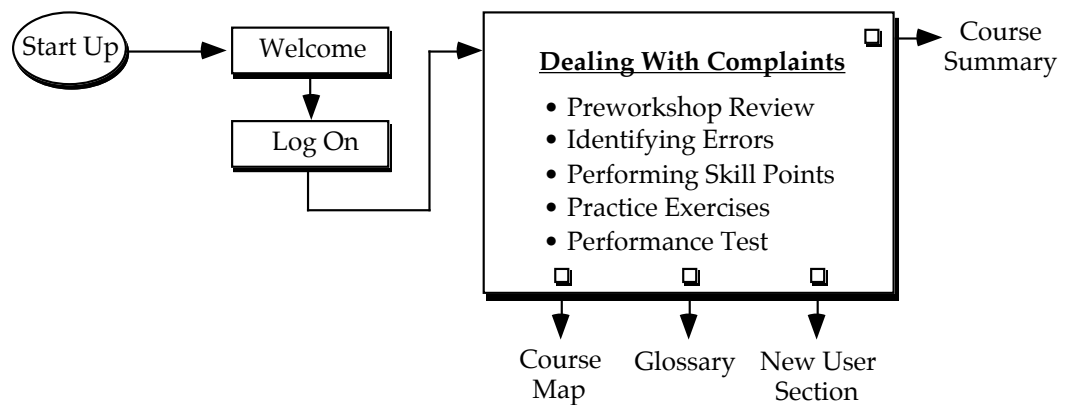
After logging on, they would be taken to the main menu. Here our voice-over narrator would explain the options. These would include the traditional interactive application features along with a listing of the course's lessons:

- Course Summary—providing an overview of its contents, objectives for each lesson, and a redefining of the rationale for taking it

- Course Map—showing the learners what sections have been successfully completed, and providing a method for quickly branching to any section of the course (by clicking on any part of the course diagram)

- Glossary—providing definitions for key terms used in the course

- New User Section—providing any necessary instruction on how the input device might function in unique situations (every effort is made to design applications that are user friendly enough to not require a review of this section)

- Lessons—these would just be listed and highlighted here. The narrator would refer learners to the Course Summary for more detailed

information (Vital Learning may suggest more appropriate titles for these lessons during development).

After explaining these options, the narrator would conclude by suggesting the learner begin with a review of their preworkshop exercises. The on-screen cursor would automatically move to, and highlight, this option—and then wait for user selection. *(It is important to allow adult learners to make their own selections—since they are ultimately better able to determine their own needs. However, it is just as important for us to lead them in the right direction.)*

Once into this section, the three preworkshop activities would be reviewed using still photographs of individual parts of the exercise worksheets—each filled out with typical answers. A discussion of each question would be presented through voice-over narration and text/graphic inserts or supers.

To create the mockups of these worksheets for photographing, it will be necessary to determine how learners *typically* answer each of these questions. On questions learners often get wrong, ours would be wrong as well. The narrator would then address why it is wrong and state or suggest a more accurate answer. Granted, this would be a "canned" discussion, but, written well, it wouldn't seem like one—and it would provide an opportunity for the narrator to deliver all of the insights, comments, and other feedback now supplied by the trainer.

After completing the preworkshop review, the learner would be branched back to the main menu. The system would recognize that the review has been completed and the narrator would suggest the learner begin the course by selecting the "Identifying Errors" lesson.

Step 4: Activity #1

Upon selecting the "Identifying Errors" lesson, the system would play the narrated video introduction to **Dealing with Complaints**, and Visual Segment 1.

This video segment would end on an appropriate freeze frame of the last scene. The narrator would then ask the learner "Did the team leader deal with this complaint effectively?" Three options would be presented:

A. Very effectively.

B. As well as could be expected.

C̲. Not effectively.

Depending upon the learner's selection, the narrator would state whether they were right or wrong...and go on to briefly explain why. A detailed explanation will be held for later.

The narrator would now say...

Now that it's clear the team leader did not handle this complaint effectively, let's see if you can identify what she did wrong.

(The system branches to, and pauses on, the first frame of this video segment. A set of video controls are presented at the bottom of the screen.)

We are now at the first frame of this scenario. The video controls at the bottom of your screen allow you to move forward or backward, or to pause or play the video as necessary. These controls operate just like the controls on your VCR or audio deck at home.

What I want you to do, is identify those sections of the video where you feel the team leader is making an error. When you think you see an error occurring, click on the "error" bar above the controls.

(Here, the cursor will be constrained to within the video controls and error bar area.)

When ready, select "play" and the video will begin.

When the learner clicks on the error bar to show they have identified an error, the video will pause at that point. The narrator will ask "What error do you think the team leader is making here?" A set of possible answers will appear over the video for the learner to select from. After selecting what they think the error was, the narrator will tell them how accurate they were. The narrator will then go on and deliver a detailed analysis of both what Rebecca really did wrong, and what she might not have done...but should have. Since this "incorrect" scenario does not contain skills Rebecca should have done, it is important for the narrator to lead learners into this territory.

The narrator's feedback here is critical. It will contain the *seeds* of the definitions of the five skill points—without yet stating what they are. That will be left for the next activity.

Should the learner identify errors in all the areas of the video we anticipate they will, *(we will build all of our feedback into the obvious areas)* the system will branch them to the next activity automatically. If not, when the learner selects the "continue" button to move on, and they think they are done with this activity, the narrator will interrupt and say something to the effect "Before going on to the next activity, there is another error we need to take a look at." The narrator will then automatically cover this and other possible errors missed, and then branch to the next activity.

Step 4: Activity #2

Upon entering this activity the narrator says...

We are now on the first frame of the next video scenario. Here, Rebecca faces the same team member with the same complaint. But, this time she handles it much better.

What I would like you to do this time, is see if you can identify what she does correctly.

Again, here are your video controls *(they pop on)*. View the scenario as many time as you wish. When you think you've found something she is doing correctly, or something she should have done in the previous scenario, but didn't, simply click on the "correct" bar and we'll discuss how you are doing.

When ready to begin, select "play."

As before, when the learner selects an area of the video containing something Rebecca is doing right (a skill point area), the video will pause and the narrator will qualify the learner's thinking by asking them to identify what they think they see from a list of possible options.

Again, the narrator will let the learner know how accurate they are. It is here, in the narrator's feedback, where the definition of this area's skill point will be developed and defined. As each skill point area is identified by the learner, the narrator will prompt them to find additional ones until all of them have been identified. If the system senses that the learner is having difficulty finding one of the areas, the narrator will prompt them with hints on where to look until they have found the last of the areas.

The skill points will not be sequentially numbered during this activity—they will only be identified. The learner will be labeling these skill points in the video in the next activity.

As each skill point area is identified by the learner, the narrator will prompt them to write the skill point down on the worksheet in their workbooks. *(This worksheet should be changed to allow the learner to number them later themselves.)*

When finished with this activity (after all of the skill points have been identified) the learner will be branched to the last activity.

Step 4: Activity #3

We noticed that in Visual Segment 3, the skill points are labeled as they are performed by Rebecca. We feel this is something the learner should be able, and required, to perform at this point.

Therefore, in this activity the narrator will instruct the learner to accurately place the video supers onto the correct segments of the video themselves.

They will use the same video controls as before. The skill points will be listed on the side of the screen in a random order. The learner will be instructed to pause the video where they think the skill point should go and to click on the skill point they think should go there. Should they attempt to place the wrong skill point in a given area, the narrator will question their choice and give them another chance. If they select

incorrectly again, a graphic- and text-based remediation will be delivered by the narrator. The narrator will then place the correct super automatically.

As each skill point is placed, its number in the process sequence will be placed with it. When finished, the narrator will prompt the learner to correctly number the skill points they wrote into their workbook in the previous activity.

When this activity is successfully completed, the learner will be branched back to the main menu.

Step 5: Practice Session

This proposal does not cover conversion of this course's practice session, however, we would like to suggest two approaches to handling it.

Although we have been dedicated to developing interactive applications for the past 19 years, we were among the first to recognize what the interactive technology *is not capable* of easily replacing—such as live, interpersonal practice sessions. While there are many types of performance skills we can build simulations for, this one could prove to be difficult.

1. One approach would be to construct several video-based case studies where team members in various situations present complaints to the learner. Using their notes on the skill point steps, they would be instructed to write how they would react to the complaint. The system would then present them with three possible ways to respond. These options would be video clips of a team leader reacting in three different ways to the complaint. None of the options would be clearly wrong, nor obviously correct. As in real life, the learner would be required to select from various shades of gray. Again, the narrator would provide feedback and support along the way. At several points in each video, the learner would be expected to correctly identify the most successful of several approaches—based on their knowledge of the skill points just learned.

    These case studies could be very powerful—especially if the learners are allowed to see what might happen when they select the wrong approach to some of the skill point areas. While not actually *performing* the skill points here, the learners' attitudes and perceptions could be conditioned well enough to have a positive impact on their behavior when they do go back to work.

    We have succeeded in achieving this performance change for several of our clients.[3] This approach worked so well on one project for Ford Motor Credit, that the classroom-based role-play workshop was dropped from their curricula.

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[3] Please refer to section 1.5, "Case Study."

2. The second suggested approach would be to not change what is currently being done. Learners would independently take the interactive sections of the **Supervision Series**, and then come together in classes for the live, practice sessions.

However, the best course of action might be to combine both of these approaches. The first approach would allow the learner to gain more insight into the handling of a variety of real-world situations...and gain a better understanding of how to handle those "curve-balls" the real world will throw at them. This would help the learners become more comfortable with, and confident in the skill points being taught.

This area merits further discussion while the prototype is under development.

1.3 SPECIFICATIONS/ASSUMPTIONS

DESIGN & DEVELOPMENT

- The current design of this application takes it beyond the usual limits of a prototype application. If produced as designed, (allowing for changes or improvements during development), this application would become a complete, finished segment of the full course.

  When the full course does go into production, this prototype would not only define the design architecture for the entire course but could be inserted into the full course more or less intact and with only minor code modification.

- In converting this seminar program into an interactive prototype, it will be necessary to translate the text in both the trainer's manual and student's workbook into interactive script material for the voice over narrator. These scripts will also need to include the ideas, insights, instructions, etc., now delivered by the trainer, live. This new material will be collected from Vital's subject matter experts during the scripting phase.

PROGRAMMING

- Programming will be done in "C" code since the current crop of authoring tools for CD-i cannot reliably handle the text supers and audio/graphic feedback during the video-based activities.

- Programming will include code necessary to support and perform activities as described in this proposal.

- Student Management code will cover the log on sequence, provide a bookmark function, present score data to the learner and capture the following data: student name and number, start and completion dates, bookmark locator, and complete/not complete data for each section of the course.

ASSET PRODUCTION

There are basically only two types of assets that will need to be created:

1. Various types of graphic screens

2. A great deal of voice over narration.

These screens and audio files will serve as replacements for functions currently performed by in-class trainers.

- New graphics will be generated for backgrounds, menus, tutorial segments, and other screens. Additionally, a great deal of video freeze

frame grabs will be captured and used during tutorial presentation and to illustrate key points during feedback presentation.

- No new video material will be produced for this program. The existing video will be re-purposed for interactive use. However, to create smooth entry and exit points for individual video segments, it might be helpful to have access to the original master shooting tapes and edit logs.

- Voice-over narration will be scripted and produced for course overviews and summaries, question presentation and feedback, and for course administration information and activities.

The following outlines tabulate the estimated number or amount of each type of asset, by course section, for budgeting purposes.

Log On

- Menu Screens 2
- Master Template Screens..........................3
- Template Copies.......................................0
- Video Encoding (in minutes) 0.20
- Video Freeze Frame Grabs......................0
- Voice Over Narration (in minutes).........1

Main Menu

This section includes Course Map, Glossary, New User section, and the Course Summary.

- Menu Screens 4
- Master Template Screens..........................2
- Template Copies.......................................7
- Video Encoding (in minutes) 0
- Video Freeze Frame Grabs......................6
- Voice Over Narration (in minutes).........6

Preworkshop Review

Primarily stills (recorded to PhotoCD) of the three worksheets with VO narration reviewing correct answers.

- Menu Screens 0
- Master Template Screens..........................4
- Template Copies.......................................13
- Video Encoding (in minutes) 0
- Video Freeze Frame Grabs.......................0
- Voice Over Narration (in minutes).........8

Activity #1

Video-based with freeze frames, text and VO narration.

- Menu Screens 4
- Master Template Screens..........................4
- Template Copies.......................................16
- Video Encoding (in minutes) 4
- Video Freeze Frame Grabs.......................8
- Voice Over Narration (in minutes).........10

Activity #2

- Menu Screens 5
- Master Template Screens..........................10
- Template Copies.......................................30
- Video Encoding...2.10
- Video Freeze Frame Grabs.......................10
- Voice Over Narration (in minutes).........12

Activity #3

- Menu Screens 2
- Master Template Screens..........................5
- Template Copies.......................................10
- Video Encoding...2.10
- Video Freeze Frame Grabs.......................5
- Voice Over Narration (in minutes).........10

Score Presentation

- Menu Screens 1

- Master Template Screens...........................0
- Template Copies.......................................0
- Video Encoding..0
- Video Freeze Frame Grabs......................0
- Voice Over Narration (in minutes).........0.5

TOTALS

- Menu Screens 18
- Master Template Screens.....................28
- Template Copies.....................................76
- Video Encoding......................................6.3
- Video Freeze Frame Grabs................29
- Voice Over Narration (in minutes)....................47.5

1.4 DEVELOPMENT MODEL

For development of this interactive prototype, ICI will use a five phase development model.

These phases are:

Phase 1:   Research, Design and Scripting

Phase 2:   Video Editing and Audio Production

Phase 3:   Graphics Production

Phase 4:   Programming, Video/Audio Encoding and File Conversions

Phase 5:   Replication and Delivery.

This model is used throughout the proposal for delineating phases of development, schedule development, budget development, and for establishing key milestones for the payment schedule.

The schedule at the end of this section outlines the tasks involved in this model, along with the timelines necessary for their completion. It may be helpful to follow this schedule as each of the model phases are reviewed.

1. RESEARCH, DESIGN AND SCRIPTING

In converting this seminar program into an interactive prototype, it will be necessary to translate the text in both the trainer's manual and student's workbook into interactive script material for the voice over narration.

In addition, these scripts will also need to include the ideas, insights, instructions, etc., now delivered by the trainer, live.

To ensure we end this phase with a solid, interactive script, we will need to:

- Rearrange elements of the current content outline as shown in the diagram on page 3. This basically involves pulling feedback information from the later part of the current seminar into the narrator's feedback in activity's one and two.

- Establish clear performance objectives and measures—defined in *interactive* terms

- Prepare a Design Document that describes and defines the entire application on paper. This document will include final copies of the content outline, performance objectives and measures, and treatment descriptions for the entire application.

Launch Meeting

The project development process will begin at the Launch Meeting. Here we will:

- Assign tasks and responsibilities for all team participants

- Review and approve schedules, specifications and assumptions

- Begin restructuring of content outline

- Begin development of interactive performance objectives and measures.

Content Outline

In this step, we will complete development of the content outline started at the launch meeting. This outline will reorganize the existing outline material and add material currently delivered by live trainers which may not be included in any existing print documents.

Objectives

Similar to the previous step, the interactive performance objectives will be completed and reviewed with Vital Learning before development of the Design Document.

Design Document

The Design Document will become the blue print for scripting, asset development, and programming of the final application. Nearly every aspect of the finished product will be addressed in this document.

Since the cost for developing interactive applications is so high, it is imperative that this document be as accurate as possible. Any changes after this point can become very expensive.

Script Drafts 1 and 2

We will develop three script draft levels: draft levels one and two, and a final Walkthrough script.

The first draft will layout the basic architecture for the course and include all of the content currently in print. This draft will be reviewed in great detail. It is at this draft review where any additional material (the ideas, insights, etc. mentioned before) will be added to the script. This material will then be present in the second draft level for review.

Walkthrough Script

This document represents another critical step (and development milestone). This document generates the final production script. It is called a Walkthrough script because we carefully "walk" through every part of it during a full team review.

All narration is read out loud. On projects were there are multiple narrators or actors, team members are assigned speaking parts and act out these parts during the review. And, every possible branching option is tested for logic and flow.

These reviews can be quite lengthy—some run for more than three days and have required as many as 18 people to perform successfully—but they have always saved us a great deal of time and money once the project goes into production. Why? Because, mistakes in the final script *always* prove to be costly.

Programming Script

An interactive script is actually two scripts in one. It contains the scripted content material (including visuals and audio material) *and* programming directions. These programming directions constitute a script for the programmer—telling him what goes where, how it will function, what it will look like, what branches are available and to where, what data to collect, etc.

Much of this script is in place by the time of the Walkthrough review, however, this script cannot be finalized until all final changes have been made to the content material.

2. VIDEO EDITING AND AUDIO PRODUCTION

Video Edit

For successful use in interactive applications, video segments must be as "clean" as possible...for two reasons:

• The CD-i encoding process throws away 98% of the visual information in the original frames, therefore, the higher the quality of the original (the greater the amount of visual information in each frame) the better looking the encoded product will appear.

• Special video effects often used in linear videos for entering or exiting video segments (such as fade-ins, dissolves, wipes, etc.) often interfere with or prevent clean branches from section to section of an interactive application. For this reason, it will be necessary to prepare the video segments for interactive delivery and CD-i encoding. Rainbow Video will need access to the original shooting masters for these video segments to prepare the encoding master tape.

Audio Production

Audio production will be done at Rainbow Video's facility—hopefully with the voice talent used in the existing video.

3. GRAPHICS PRODUCTION

Based on design specifications in the Design Document, Rainbow Video will generate all graphic screens used in the application. It will be necessary for all members of the development team to review these screens: Vital-for content accuracy and look-and-feel; programming-for aspect ratios, element placement, text location and size, etc.; and Advance-for color intensity, hue saturation and other image issues related to successful CD-i conversion. The final screens will then be sent to Advance Multimedia for processing and encoding.

4. PROGRAMMING, VIDEO/AUDIO ENCODING AND FILE CONVERSIONS

Video Encoding

The video will be encoded by Advance Multimedia. Although our video segments will be quite short, few applications have been developed to date with as much programming code associated with it as these will. In the two basic video clips, (the incorrect and correct segments) we have already identified more than 36 "I" frames that will need to be manually inserted into the video during encoding. In most normal CD-i programs, there would be only two.

It is these "I" frame locations that the programmer will use to enter and exit the video for inserting or removing text supers, triggering audio files, branching to feedback of various types, etc. Because of this complexity, the encoding process will need to be under our direct control.

Audio Encoding

The master reel-to-reel tape from Rainbow will be converted to a digital format, broken into individual sound files, labeled, and then processed/compressed into the CD-i format. These files will then be synched to the visuals to create "sync scripts" for programming.

Graphics Conversion

Once the graphics files are created and approved, they need to be processed, converted, and compressed into the CD-i format. As mentioned before, this will be done by Advance Multimedia. These files, along with the encoded audio and video files, will be turned over to Steve Fedder for programming.

Code Development

Steve Fedder will program two versions of the application: the first will be the beta level disc used to confirm that everything looks and functions as defined in the Design Document. Steve will repair any bugs or perform minor tweaks that need to be done after our review of this disc.

Steve will then cut the second version of the disc...the check disc. Again, this disc will be exhaustively tested to ensure its conformance to the design specifications.

5. REPLICATION AND DELIVERY

Following the approval of the check disc, we will "burn" four final copies of the program for delivery to Vital Learning.

Additional discs can be "burned" for approximately $95 each at the time the original four are burned. However, should Vital need more than approximately ten copies of the disc, it might be cheaper to master and replicate the disc in volume. The minimum quantity is 500 discs...however, for only $1,600-$1,800, this is quite a bargain.

Vital Learning: Prototype Development Schedule

Development Phases	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8

Week 1 | Week 2 | Week 3 | Week 4 | Week 5 | Week 6 | Week 7 | Week 8 | Week 9 | Week 10 | Week 11 | Week 12 | Week 13 | Week 14 | Week 15 | Week 16 | Week 17 | Week 18 | Week 19 | Week 20 | Week 21 | Week 22 | Week 23 | Week 24 | Week 25 | Week 26 | Week 27 | Week 28 | Week 29 | Week 30 | Week 31 | Week 32 | Week 33 | Week 34

1. Research, Design and Scripting

— Pre-Launch Activity — Pre-Launch Preparations

— Launch Meeting — ★ Launch Meeting

— Content Outline — Restructure Content Outline for Interactive Delivery

— Objectives — Establish Performance Objectives & Measures

— Design Document — Prepare & Review Design Document

— Script Drafts 1 & 2 — Script Draft 1 / Draft 2 / Script Development

☆ Project Launch

— Walkthrough Script — Script & Review Walkthrough Draft

— Programming Script — Develop Programming Script

☆ Design Document Approval

2. Video/Audio Production

☆ Script Walkthrough

— Re-edit Vid. Master — Secure Video Masters & Re-edit (Creates Encoding Master)

— Audio Record — Audio Record (Approved During Recording)

3. Graphics Production

— Computer Graphics — Develop Computer Graphics

— Graphics Reviews — Computer Graphics Reviews At Rainbow

4. Programming

— Video Encoding — CD-i Video Encoding

— Audio Encoding — CD-i Audio Conversion & Encoding

— Graphics Conver. — CD-i Graphics Conversion & Encoding

— Code Development
 • Beta Level — Code Development – Beta Level
 • Final Approval — Final Approval

5. Replication — Replication

☆ Beta Disc Review

☆ Final Approval

Symbol Key:

Symbol	Meaning
☐	Activity Durations
▨	Remote or Independent Reviews
★	Reviews at Vital
▧	Reviews at Vital
☆	Milestones

1.6 BASIS FOR INTERACTIVE ISD APPROACH

Before stepping into the development and use of interactive courseware, organizations should understand **why** they need be interested in it in the first place...and the reasons may not be what you think.

The following section looks at this issue. It presents interactive research data, insights into why and how interactivity works, and it defines the basis for this proposal's interactive ISD approach. This approach will be used to develop an effective interactive version of the **Dealing With Complaints** program.

BACKGROUND

The interactive training industry has long shared something in common with newborn babies—neither one arrived with a set of instructions or an owner's manual. Application developers and parents alike quickly discovered that raising either one to maturity could be difficult.

Over the past 16 years, application developers have nurtured the growth of this new and powerful form of communication. However, the path of this growth is littered with "boo boos." As any good parent knows, we often learn more from our failures than we do from our successes—and in 16 years, we have learned a great deal.

We found we needed to understand more than just the technical capabilities of the interactive hardware. What we really needed to learn was how to use this hardware to interface with the human mind and its emotions. To do this, we had to understand more about human behavior, physiology, psychology, and ethology than ever before.

RESEARCH

After the first ten years of trial and error, interactive developers began to understand how to design for this new technology. Clients finally started to see benefits from their investments. And there grew a renewed interest in testing this technology against traditional forms of training.

In the last eight years, a fair amount of research information has become available. The diagram on the following page presents a summary of key data from six of these studies. In each case, a given course was produced in both interactive and classroom formats. Content included both soft and hard skills training. In most of these studies, separate developers were chosen for each format.

This allowed each version of a course to be produced by developers specializing in that format.

Research Highlights
Interactive Videodisc Versus Live Instruction

Learning Gains....................................56% Greater

Consistency of Learning ....50-60% Better

Delivery Variance...............................20-40% Less

Training Compression.......................38-70% Faster

Learning Curve ....60% Faster

Content Retention.............................25-50% Higher

Sources: US. Army, IBM, Xerox, United Technologies, WICAT, Federal Express

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The results are as follows[4]:

- In the area of *Learning Gains*, the studies found that interactive versions of courseware increased learners' understanding and retention of the content by as much as 56 percent over classroom versions of the same courseware.

- *Consistency of Learning* measured how consistent the individual learners' understanding of the content was. Compared to the classroom format, the interactive learners' understanding of this content was 50 to 60 percent more consistent.

- *Delivery Variance* measured how consistently the delivery media (or instructor) presented the content from learner to learner or class to class. Although the different paths individual learners can take through interactive courseware create the potential for variance, these studies found 20 to 40 percent less variance among the interactive learners' understanding of the content.

  It's interesting to note that this reduced variance can spell the difference between success or failure for many organizations on the service side of our industry.

- *Training Compression* measured how much faster learners completed their interactive version of a course as compared to the classroom

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[4] Not all studies tested for each of the following measurement factors. Terminology for similar measurement factors sometimes varied.

version of it. This means that if a given course took classroom learners ten hours of "seat time" to complete, the interactive learners may have completed it in as little as three hours. This data, showing average training compression's of 38 to 70 percent, is consistent with our experience.

- *Learning Curve* is similar to "Training Compression" and measured how quickly learners gained mastery of their course's content. In these studies, the curve for interactive learners was on average 60 percent faster than for their classroom counterparts.

- In our assessment, **Content Retention** is the most important factor measured by these studies. It is here that most organizations gain their greatest return on investment. This item measured how much content reached *long-term* memory among the learners. Although all of these studies appeared to test retention in a time frame of about 30 days or less following course completion, their findings of 25 to 50 percent higher retention factors for the interactive format are significant.

Other, less formal tests, have recorded relative retention gains as high as 350 percent when measured 6 to 9 months after completion of a course. One such test showed a 24 percent retention level for classroom format measured after six months, but a 70 percent retention level for learners who took the interactive version of the same course. These findings correlate well with data from interactive courses we have developed for our clients.

Those familiar with other studies can point to data which actually show *no* improvement for interactive training over traditional classroom formats. From our observations, the difference boils down to the quality of the individual, interactive program developers. Not all are created equal. In almost every case, developers well-known for successful applications generate impressive data when *their* programs are compared with traditional delivery formats.

WHY THE IMPROVEMENT

There are many reasons for interactive technology's learning improvements—multi-sensory input, learner control over the educational process, one-on-one training support, and other factors. These factors are fairly well known and understood. However, we at Interactive Communications have always felt there was a single element *essential* to the success of any interactive application—an element so important, that if an application didn't possess it, it would be doomed to failure.

It has taken us years to clearly identify this element and master its use. However, it was never hidden. It can be boiled down to this statement, "Learning is shown as a change in behavior as a result of experience." This statement can be found in the writings of most major instructional design theorists—almost word for word.

This quote represents a rare note of agreement among learning theorists. It points to the critical importance of *experience* as the primary element which *causes* behavioral change.

It is for this reason that we put so much emphasis on engineering "learning experiences" into our interactive programs. We have found that it is through the learners' *application* of course content, through their *performance* of course objectives, and through their *experiences* gained in real-world simulations, that knowledge enters long-term memory and human behavior is subsequently changed. *Experience* is the key.

The diagram below illustrates where the most critical learning improvements occur in interactive courseware. The top of the diagram
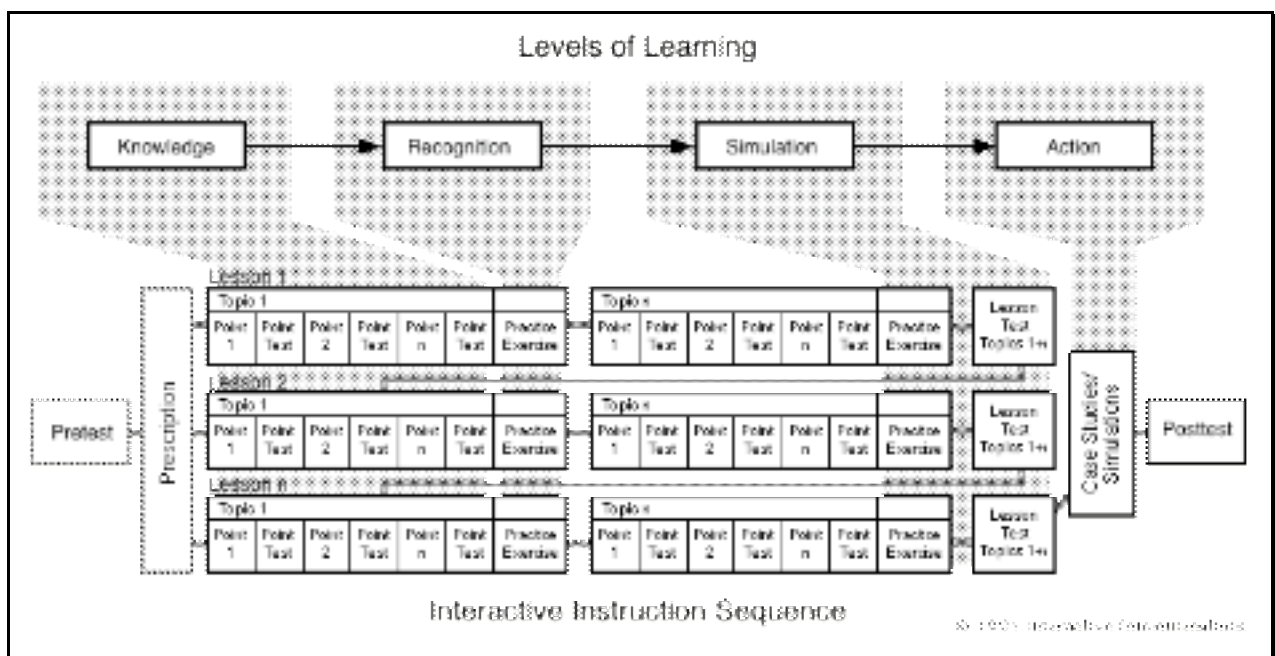
lists the four basic levels of learning: knowledge, recognition, simulation, and action. The bottom presents a flow diagram from a typical interactive course. The gray shading in between shows approximately where each level of learning is supported.

The first level of learning is **knowledge.** Here, learners mentally store information which will later be used in mastering course objectives. In a sense, learners are being "fueled" with information. This information, however, is not necessarily well networked at this time. At this level, students must "take on" a great deal of basic information before the terminal objectives can be met. In interactive courseware, this knowledge level is generally supported during the tutorial presentation of content points and point tests.

The *recognition* level involves bringing the learners' newly acquired knowledge to a conscious level and allowing them to manipulate that knowledge. When learners manipulate or reconstruct "knowledge," two important things occur. First, when that knowledge is brought to a conscious level, it becomes broadened and deepened. Second, it becomes more tightly networked with related knowledge. At this level, learners will begin to assimilate the basic knowledge they have acquired during the knowledge learning level. Recognition level learning generally occurs during the practice exercises within individual lessons. Here, learners must remember and manipulate their new knowledge well enough to answer basic test questions.

The *simulation* level is where learners "put the pieces together." The knowledge elements have now been manipulated and reconstructed sufficiently to function as a whole. This level is a "modeling" step. Understanding the concepts behind an entire procedure is much different from memorizing only the discrete elements in that procedure. In interactive courseware, this level of learning is supported by simulation-based practice exercises and lesson tests. However, it is not confined here. In some of our courses, simulation-based exercises may replace or augment text-based testing during point presentation. In other courses, it may not occur until the case studies or simulations. Budget, schedule, audience, and content requirements all play a part in determining the ultimate design of individual courses.

At the *action* level, learners use the knowledge they've developed throughout the course to cognitively "perform" what they've learned. Through this *performance*, learners are able to demonstrate the highest level of mastery measurable by any of today's training technologies.

INTERACTIVE GOAL

Our goal with interactive technology is to bring learners into the action level more quickly and effectively than is possible through traditional forms of training.

As already mentioned, learners must *perform* what they've learned in order to reach the action level. In addition to this, we've also learned that this performance must be in the context of the learner's real-world environment. However, in most cases it is not practical or even possible to simulate these real-world situations in a classroom.

The interactive format *does* support action level learning by allowing the construction of real-world simulations through the use of video, graphics, stills, audio, text, and interactions. Simulations can be culturally engineered to test knowledge *and* performance abilities under realistic conditions and circumstances.

SKILL DEVELOPMENT

As training developers, one of our greatest hopes is that what we teach our learners eventually turns into better job performance skills. But, how do we get our learners to make the jump from "performance" to "skill development?" Once again, the key lies in *experience.*

The *primary* reason for action level's long-term benefits is not the *performance* of what an employee learns, it is the *experience* these learners gain *from* that performance. It is this *experience* which allows the development of true job-performance skills. In other words, performing what's been learned creates the experiences which result in skill development. In addition, the sooner this performance occurs after training, the more successful the development of these new skills.

In traditional training formats, opportunities for skill development do not occur until after learners return to the job site and are no longer in a controlled environment. Skill development does not occur if the learners are not required to perform their new knowledge within a relatively short period of time following completion of the course. Those who don't, fail to remember enough of the content to effectively put it to use—and therefore fail to develop the requisite skills.

This points to one of the most important benefits of interactive training. In well-designed interactive courseware, *all* learners must perform *all* objectives *before* completion of the course. In addition, the interactive program's practice exercises, simulations, and case studies require that this performance occur within a controlled training environment.

THE BOTTOM LINE

With properly designed interactive training applications, employees can learn a lot more, learn it more quickly, and remember it longer than through any other form of training.

1.5 CASE STUDY

Designing and producing experience-based learning products is expensive—sometimes more than triple the cost of classroom versions of the same products. However, research data on the increased effectiveness of interactive courseware demonstrates that a company's return on investment can be proportionally greater.[5]

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[5] Please refer to research data presented in section 1.4, "Basis for Interactive ISD Approach."

CASE STUDY[6]

In one case, one of our clients invested $240,000 in the design and development of an interactive videodisc version of one of their courses. This course had been delivered in classroom format for nine years, and cost less then $80,000 to produce.

The cost justification for this new course was that it could be delivered through the company's field offices, rather than at the corporate training center. This saved the company almost $300,000 in travel and subsistence expenses in the first year alone. The company was more than pleased. However, we could not convince our client that they would reap an even greater return-on-investment elsewhere—until nine months after the course was in use.

After nine months, employees trained on the interactive system traveled to the corporate training center for a hands-on, laboratory style advanced class on this topic. This class was so effective as it was, we recommended against its being converted into an interactive course. Here, 25 students and four top instructors worked as a group solving cases related to the course topic no one in the field had been able to solve. Each of these cases had been tackled by a minimum of four field employees during a minimum six month period. Tackling these cases in this course is a last-ditch effort to solve them before they are written off as a corporate tax loss.

Over nine years, records showed that each class solved an average of two to five of these "impossible" cases. However, the first class to arrive that had been trained on our new interactive version of the "basics" course, solved 67 of these "impossible" cases. The averages for these interactively trained employees since then have been between 70 and 100 solved cases per class!

Since each solved case returns an average of $5,000 to the corporation, this company raised the performance skills of its employees from an average of $20,000 per class to an average of $425,000 per class. To date, this class has been given more than 29 times—for a total return from the classroom alone of more than 13 million dollars.

Why? An internal evaluation clearly showed that employees were learning more, remembering it significantly longer, and actually developing performance skills from within the interactive training environment—improvements never achieved from their seminar/classroom versions of this same course.

The same highly effective, interactive design concepts that made the above case study successful will be included in the design of this prototype.

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[6] This case study is confidential material and is proprietary to Interactive Communications, Inc. It may not be published nor paraphrased in any form per agreement with the original client. It may be used only by Interactive Communications for their own marketing and/or educational purposes.

2.0 QUALIFICATIONS AND EXPERIENCE

2.1 INTERACTIVE COMMUNICATIONS, INC.

HISTORY

Interactive Communications, Inc. (ICI), as an interactive application development organization, has its roots firmly planted in research performed for the Ford Foundation in the early 1970's. The founder of ICI was tasked with studying the human behavior aspects of communications development.

This study resulted in the seeds of theories that would later be applied to the design and production of training, information and marketing programs.

These seeds landed on their most fertile ground in 1975 with the invention of laser disc technology. This technology was developed under NASA contract as an alternative to magnetic storage media for spacecraft computer systems. Later, in 1976, a Federal grant was awarded to develop commercial uses for this NASA invention to find *educational* uses for the new technology. It was here that the founder of ICI had an opportunity to apply the results of the Ford research to the design and development of the world's first Levels 1, 2, and 3 interactive laser disc programs.

The founder of ICI, and recently the ICI organization itself, has gone on to work on many of the largest and most important interactive projects in the country for companies like Digital Equipment Corp., IBM, American Airlines, McDonalds Hamburger University, Cadillac, Consumers Power, and others. Recent projects include:

- *Ford Motor Credit (PC Teach library)*—Skip Tracing, Credit Decision Making, and four courses on office forms use training.

- *Ford Parts and Service (IVLS library)*—Redesign of the IVLS courseware architecture and rebuild of the IVLS Program Development Guide used by all IVLS courseware development vendors.

- *Alive Center*—Knee Injury Diagnosis disc constructed for four separate audience levels—from orthopedic surgeons down to weekend coaches serving school or neighborhood sports teams.

- *Chrysler (SET library, Service Advisor library, FAST library)*—Assisted in developing the ISD architecture, the design/production processes and management systems, and in designing a proprietary authoring system specifically for Chrysler's interactive videodisc courseware.

- *UAW-GM ("Skills 2000")*—This interactive information kiosk allows employees to assess their abilities on skills that will be required for their job areas in the year 2000. After assessment, the system prescribes a suggested curricula that will prepare them for these skill requirements.

- *Allstate Insurance ("DRIVING" CD-i Prototype)*—Young driver education prototype (a successful effort to redesign how driver education is taught using CD-i technology for delivery).

- *Chicago Transit Authority ("Competing for Customers" CD-i Prototype)*—Prototype for the design of an entire curricula of interactive, transit related training libraries. This prototype defines the instructional architecture of these courses and covers approximately 15 percent of the content in their customer service program.
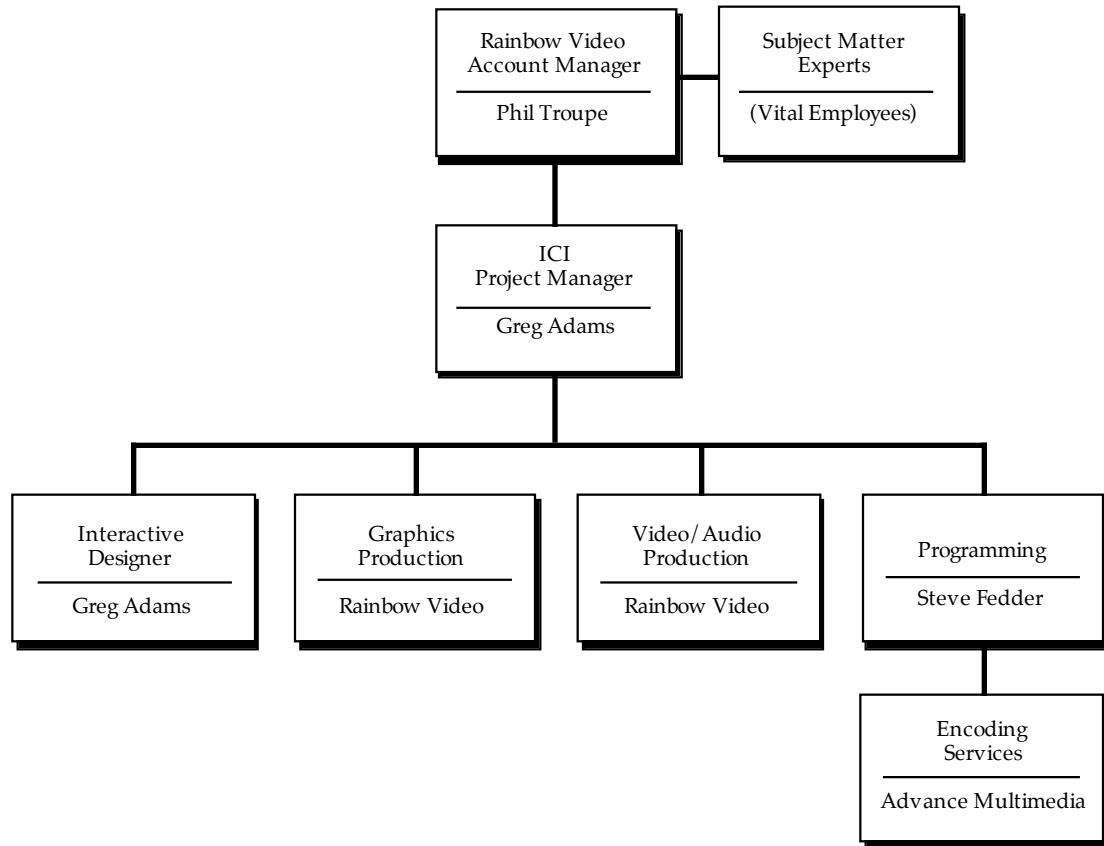
Pertinent to this project, ICI's involvement with the CD-i technology began eight years ago, in 1987. Because of our extensive experience in the development of interactive courseware for industrial markets, Philips' American partner, CapDisc, approached us for developer input into the design of the CD-i hardware and software system. We were among a handful of development organizations in the US involved in this effort.

One of our most recent CD-i projects for Allstate Insurance relied heavily on the use of full motion video, and state-of-the-art, experiential learning design. This application was designed and produced to demonstrate a new approach to, and instructional methodologies for, teaching driver's education. It has undergone extensive evaluations at Northwestern University, Carnegie-Mellon University's Decision Sciences Laboratory, and at four high schools systems in Michigan and Illinois. A consortium of investors has just recently been established, with five million dollars in funding, to begin development of an entire interactive driver education curricula based on this prototype's design.

2.2 PROTOTYPE DEVELOPMENT TEAM

The diagram below illustrates the structure of the team assembled for this project. Only key players are represented here—administrative and support staff will be applied on an "as needed" basis.

```
┌──────────────────┐        ┌──────────────────┐
│ Rainbow Video    │        │ Subject Matter   │
│ Account Manager  │────────│ Experts          │
│                  │        │                  │
│ Phil Troupe      │        │ (Vital Employees)│
└──────────────────┘        └──────────────────┘
          │
┌──────────────────┐
│ ICI              │
│ Project Manager  │
│                  │
│ Greg Adams       │
└──────────────────┘
          │
   ┌──────────────┬──────────────┬──────────────┐
┌─────────┐  ┌─────────┐  ┌─────────┐  ┌─────────┐
│Interactive│ │Graphics │  │Video/Audio│ │Programming│
│Designer  │  │Production│ │Production│  │         │
│          │  │         │  │          │  │Steve Fedder│
│Greg Adams│  │Rainbow  │  │Rainbow   │  │         │
│          │  │Video    │  │Video     │  │         │
└─────────┘  └─────────┘  └─────────┘  └─────────┘
                                              │
                                        ┌─────────┐
                                        │Encoding │
                                        │Services │
                                        │         │
                                        │Advance  │
                                        │Multimedia│
                                        └─────────┘
```

TEAM MEMBER DESCRIPTIONS

The following is a brief description of the role each team member will play in the development of this project, along with a description of the experience that qualifies them for this role.

Gregory L. Adams—Project Manager

Mr. Adams will serve as both the Project Manager for this project, and as the lead Interactive Designer.

Over the last 19 years, Mr. Adams has personally managed the design and development of more than three million dollars worth of interactive training courseware, and has serves as the design consultant on over 30 million more.

The quality and effectiveness of these products is due in part to a project development process he engineered which handles the unique problems inherent in the development of interactive courseware. This development process has been adopted by a number of our clients including Ford Parts and Service, Ford Motor Credit, Chrysler, Ross Roy Communications, and others. It has also become a bid spec. requirement by these organizations for use by all other courseware development vendors. A brief description of this process is included in the "Management Plan" section.

More detailed background information on Mr. Adams can be found in "Appendix A: Resume."

Rainbow Video

Rainbow Video has been our choice for shooting video for interactive projects for many years. Our relationship goes back more than 15 years.

Rainbow produced all of the video material for two of our largest and most successful interactive seminars on customer service training (more than 9 hours of finished, on-location, interactive scenarios.) In addition, we worked closely with them in developing the interactive video segments in the CD-i prototype for the Chicago Transit Authority's **Competing for Customers** program.

On this project, they will provide account management for the duration of the project, handle preparation of the video master for encoding, and perform all graphics development.

Steve Fedder

At this point in time, Mr. Fedder is the most experienced and advanced CD-i programmer in the country where full motion video is concerned.

Mr. Fedder has programmed or authored nearly all of our interactive applications for the past seven years. Platforms include all major videodisc training platforms, CBT's, interactive kiosks, interactive touch screen video walls, wired and wireless audience response systems, and others.

Advance Multimedia

Advance Multimedia is one of the leading suppliers of CD-i encoding services in the Midwest region. They were also one of the first US companies to support the CD-i format. They provide a wide variety of MPEG and CD-i encoding services to clients all over the world...and have provided all of ours for the past five years.

On this project, Advance will supply all encoding and conversion services.

3.0 MANAGEMENT PLAN

3.1 PROJECT MANAGEMENT PROCESS

Complex, interactive development projects are driven by a variety of factors; schedules, budgets, specifications, etc. However, they are facilitated and managed by a series of inter-related process documents; schedules, development documents, status reports, memos, financial statements, etc.

For this project, the most important tool will be the Status Report. It will report on work in progress, log element completions, alert individual team members to upcoming events, etc. In other words, the Status Report will make sure everyone involved on the team knows what's happening, where, and by whom. However, since this project is so small, it will be published on an as-needed basis and distributed to all team members.

To ensure the success of our projects, we leave no room for chance. Every team member is provided a personal copy of a Project Development Handbook. This handbook contains tab slots for all documents that will be generated during this project—no one is left with an excuse for not having what they need when they need it. The following section describes the handbook in more detail.

3.2 PROJECT DEVELOPMENT HANDBOOK

Through years of experience in the design and production of complex interactive application projects, Interactive Communications has developed a sophisticated project management process. This process centers around the construction and implementation of a Project Development Handbook. A unique Handbook is designed and produced for each project.

The design and implementation of this Handbook has been adopted by a number of our clients. These include Ross Roy (for Chrysler's interactive videodisc libraries), Ford Parts & Service (for the IVLS library), Ford Motor Credit (for the PC Teach Library), and others. At Ford Credit, the design and implementation of this Handbook is a bid spec. requirement for all courseware development vendors, and it is an integral part of their overall courseware development process. In addition, this process, and the management tools contained in the Project Development Handbook, have been used as models for graduate level management programs at Walsh College here in Michigan.

HOW DOES IT WORK?

As soon as Interactive Communications is notified of a project award, the development team will assemble Project Development Handbooks for all key players on the team—for both customer and Interactive Communications team members. These will be reviewed and put into effect at the project launch meeting.

A sample of some of the rules for use of this Handbook are outlined as follows:

• Team members must bring their personal copy of the Handbook to all project meetings.

• All documents generated as a part of this project must be three-hole punched for insertion into the Project Development Handbook. It is the responsibility of the document generator, or duplicator, to make sure all documents are punched.

• Sufficient copies of all documents must be made for inserting into each member's Handbook (e.g. if there are eight team members on a specific project, eight copies of each document must be brought to the meeting by the document generator.)

• All documents <u>must</u> contain footers. These footers should look like the following:

<u>Date</u>	<u>Time</u>	<u>Page Number</u>	<u>Project Name</u>
6/22/92 1:21 PM		32	Vital Prototype
GLA—HD,Projects,Job Quotes, Rainbow		© 1995 Interactive Communications, Inc.	
	<u>File Locator</u>		<u>Document Origin</u>

<u>Date of Publication</u>—Since information is a perishable commodity, the date on each document establishes the relative "freshness" of the information it carries. On projects such as the one currently under development, many types of important information changes daily. It is essential everyone is aware of the "age" of each piece of information.

<u>Time of Publication</u> —When documents are under development they may go through a number of changes, or stages of evolution, during a single day. Once draft copies have been circulated for revisions, it can be very difficult to identify the final, corrected copy. And since many revisions involve only fine-tuning of facts, figures or concepts, these various versions may all look alike—but contain substantial differences in meaning. Therefore, **<u>all</u>** documents will be time stamped as well.

Page number—For the sake of consistency and standardization, page numbers will be centered on the first line of the footer as recommended in Webster's Secretarial Handbook of business language usage.

Project Name—Although there is only one project currently under development, different aspects may be given unique names for the sake of easy recognition (e.g. "'Vital Design Guide," "'Vital Scripts", etc.). For this reason, every document must specify what project, or part of the project, it belongs to.

File Locator— On this project, there may be as many as 13 people generating documents. It is frequently necessary for more than the creator of a document to access the document file for additional printouts, to make revisions, or to "cut-and-paste" information to create new documents. To do so, every project member must be able to locate the document file. For this reason, every document must display the creator's three initials, the directory folders the file is contained in, and the file's name (e.g. GLA—HB,Projects,Rainbow,Vital)

Document Origin—The Document Origin simply identifies which of the various companies involved in this project created the document.

The effective implementation of this Handbook assures that all project team members know at a glance precisely what's been accomplished, what's currently under development and what has yet to be accomplished by when and by whom.

Benefits of the Project Development Handbook include:

- All team members have access to all pertinent project information at all times

- It ensures clear and universal communication—preventing costly errors, schedule delays, or possible reductions in the quality of the final products

- It provides a vehicle for the efficient implementation of the development plan

- It also provides a detailed documentation resource (Application Maintenance Guide) for future modifications or updates to the development products.

Interactive Communications' project management process and its accompanying Project Development Handbook, are powerful tools for effectively controlling the various factors which impact the development of high quality interactive projects.

4.0 COST PROPOSAL

4.1 BUDGET SUMMARY

The following cost figures are fixed prices. However, if during the course of the project Vital Learning determines that the scope of work should be modified, expanded or reduced, ICI, Rainbow Video, and Vital Learning will jointly modify the budgets accordingly.

1. Research, Design and Scripting...xxxxx

2. Video Edit & Audio Production xxxxx

3. Graphics Production xxxxx

4. Programming, Video/Audio Encoding & File Conversions............xxxxx

5. Replication & Delivery [four CD-i disc copies (WORM burns)].......xxxxx

<div align="right">

Subtotal.......................xxxxx

Administration...xxxxx

Total............................xxxxx

</div>

4.2 BUDGET DEVELOPMENT NOTES

- As is customary in the interactive development industry, prototype projects are given special treatment. Since they usually represent an organization's first entry into the use of interactive technologies, they are given preferential treatment when it comes to both budgeting and scheduling.

  At Interactive Communications, Mr. Adams personally handles the development of all prototype projects. In addition, the company places no mark up on either outside or inside costs and expenses—all budgets listed above represent actual costs.

  The primary reason for preferential pricing on prototype projects is that they might not be affordable otherwise. Startup costs are among the greatest expenses in developing interactive applications. On a prototype, all of the startup costs of full course development projects are incurred, however the amount of material developed within the application can be quite small. Therefore, a prototype's cost can be disproportionate to its size.

  On full size projects we are also able to take advantage of "economies of scale" and secure volume pricing on many areas of development.

- Travel between Interactive Communications' facility in Michigan and Vital Learning's in Nebraska has not been included in these budgets. These costs will be invoiced separately and at cost. We anticipate that four trips to Omaha will be necessary by Mr. Adams during prototype development:

    1. Launch Meeting—To begin development of the content outline, interactive performance objectives, and to confirm basic project assumptions and establish responsibilities for all team members.

    2. Script Draft 1 Review—It is with this document that all new material (not already in print) will need to be developed and inserted into the script document.

    3. Script Walkthrough—This constitutes the final review of the script before going into asset production. It represents a critical milestone in the development process.

    4. Beta Disc Review—This milestone frequently serves as the final approval stage. Every effort is made to deliver a complete, and debugged product at this time. However, if any bugs or errors are found, they will be made and a final check disc burned and delivered for final approval.

4.3 P*AYMENT* S*CHEDULE*

The following Payment Schedule is based upon this project's approval milestones. These milestones are defined in the Development Schedule presented earlier in this document. It places payments at roughly one month increments for the duration of the project. If this payment schedule is not satisfactory, please contact us to discuss other options.

If acceptable, ICI will generate a cost accounting report and an invoice for the correct amount to be paid against the Purchase Order upon completion of each of the milestone activities.

Milestones— Completion of:	Estimated Date	Percentage of Project Costs	Invoice Total
1. Project Launch	TBD	15%	xxxxx
2. Design Document Approval	TBD	25%	xxxxx
3. Script Walkthrough	TBD	25%	xxxxx
4. Beta Disc Review	TBD	25%	xxxxx
5. Approval of Final Disc	TBD	10%	xxxxx
Totals		100%	xxxxx

Payment terms for the above invoices are to be made in accordance with ICI's standard Terms and Conditions (see Appendix B).