Media and Cost Analysis: Step-By-Step Guide

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1. Introduction

Two approaches are presented in this Guide:

Preliminary Analysis #1: To quickly assess the feasibility and potential savings that may result from using alternate delivery options. This approach is highly effective in analyzing courses with single learning objective/outcome. Key data is collected under the **Data Collection Wizard** and submitted for analysis. This approach (a) is simple to use, (b) assesses the potential for alternate delivery options within few minutes, and (c) analysis can be easily refined under the **Course Analysis** folder.

Detailed Analysis #2: To assess the feasibility of using alternate blends of delivery options. Recommended for courses with multiple learning objectives/outcomes. To facilitate the forecasting of development, hardware, administrative, management, travel, instructors, facilities, transmission, maintenance and support costs; templates can be created and made available to all analysts. In addition to speeding the analysis process, Cost Templates ensure consistency in cost estimates, as well as facilitates carrying out multiple "what if scenarios". Detailed analysis is carried out under **Course Analysis** folder.

For in depth information, please refer to Chapters 3 to 10 of ADVISOR "Selecting the Right Blend of Delivery Options" User Guide. Remember that context sensitive help for each screen is also available by clicking on Help (button).

2. Table of Contents

3. Approach #1: Preliminary Analysis

<u>Objective:</u> To determine the most economical delivery option that meets organizational, learning and learners' needs.

Step 1. To analyze a new course, click on the 📁**Data Collection Wizard** folder.

P.S. To edit an existing course or carry out a detailed analysis of a new course, click on the 📁 **Course Analysis** folder.

Step 2. Click on Add (button) (top left corner).

Step 3. The following approach is used in assessing the most cost effective delivery option:
   ➢ Identify delivery options that meet organizational, learning and learner needs
   ➢ Forecast and compare the costs of plausible options

Critical data required for analyzing a new course is presented in this section. General info is requested in the 1st tab, instructional design factors in the 2nd [Instructional Requirements] tab and cost data in the 3rd [Cost Factors] tab. All fields with an asterisk (*) should be completed. But of course, the more data you provide the better the results. Once all screens (i.e., the 3 tabs) have been completed, click Save.

For your reference, a brief description of requested data is presented below.

Step 3a. General Information

Course Title   Input the course title, maximum 200 characters

Learning objectives   What is the learning outcome/objective of this course? If more than one,
                               what is the most dominant category?

# of hours required to   Estimate the number of hours required to deliver the course in an instructor-
deliver the course   led format.

Course start date   Indicate the expected delivery date of the course. If the course exists, then
[dd/mm/yyyy]   use today's date as a reference point.

Expected life of course   Over how many years can the course be delivered before it becomes
[years]   obsolete, irrelevant or requires major changes? If the course exists, estimate
                               the remaining life, using today's date as a reference point.

Number of trainees over   Estimate the number of learners over the life of the course. If the course
the life of the course   exists, estimate the number of learners using today's date as a reference
                               point.

Client   Indicate the Client for this course. In other words, costs and resources for
                               the course are allocated to which Client.

Step 3b. <u>Instructional Design Factors</u>

Main reason for the course	What is the main reason for the course?

❑ Certification; if employees (inspectors, for example) have to be certified each year.
❑ Initial training; if the course deals with new product, program or policy (for example).
❑ Recurring/Refresher; if employees are required to take the course each year (Workplace Hazardous Materials Information System, for example).
❑ Upgrade knowledge; if course advances trainees' existing knowledge (new features of Word 2007 for Word 2003 users, for example);
❑ Orientation; if it gives new employees an overview of the organization, for example.

Impact: While Electronic Performance Support Systems provide effective means for upgrading the knowledge of employees, they are not suited for initial training, for example.

Formal testing required for the course	Is formal testing required for this course? If yes, what type of test is required:

❑ Performance based; requires instructor or SME to observe the performance of trainees (driving test, for example).
❑ Skill/Knowledge based; requires trainee to answer questions (multiple choice, solve problems, essay, etc.) that can be evaluated by instructor or SME at a later date.
❑ Oral presentation; if trainees are required to make a presentation and/or answer questions in real-time posed by a panel, for example.
❑ Essay writing; if trainees are required to write open-ended questions test.
❑ On the job; if trainees are evaluated by the supervisor on the job.
❑ Group projects; if trainees' evaluation is based on a group project

Impact: Self-study media such as Print and CBT are not adequate for performance-based evaluation; while some skill/knowledge based tests can be effectively carried out through computer based testing.

Time to develop the course	Is there a deadline on course development or updating – i.e., is time available to develop the course material?

❑ Critically short; if the course material is required within a three months period, for example, and the consequences of missing the deadline are high.
❑ Short; if the course material is required within a six months period, for example, and the consequences of missing the deadline are moderate.
❑ Adequate; if the development/revision time is flexible or the consequences of missing the deadline are not critical.

Impact: Options that require lengthy development effort such as Multimedia CBT or WBT may not be practical if the development time is critically short and the consequences of missing the deadline are high.

Sufficient instructors to deliver the course

Are there sufficient qualified instructors/subject matter experts to deliver the course in an instructor-led mode?

❑ Critically short; if the number of instructors/subject matter experts is very limited. In other words, few individuals have the necessary expertise; or too many resources (guest speakers, for example) are required to conduct "live training".
❑ Short; if the number of instructors/subject matter experts for the course is limited, but manageable.
❑ Adequate; if the number of instructors/subject matter experts for the course is adequate. In other words, adequate resources are available.

Impact: Classroom delivery may not be appropriate for training a large number of individuals scattered over a large geographic area in a short period of time, if few individuals are qualified to deliver the training.

Time for the delivery of the course

Does the course have to be delivered within a specific period of time?

❑ Critically short; if the course has to be delivered as quickly as possible and the consequences of delays are high. Training sales force on a new product, or customer service staff on a new reservation system, for example.
❑ Short; if the course has to be delivered in a short, but manageable, time frame; and the consequences of missing the deadline are moderate.
❑ Flexible; if the delivery schedule is flexible. Although there may be benefits for acquiring the knowledge sooner than later, the consequences of the delay are minimal.

Impact: Classroom delivery may not be appropriate for training a large number of individuals scattered over a large geographic area in a short period of time, especially if few individuals are qualified to deliver the training.

Course content generic or organization specific

Is the course content generic or specific to the organization?

Impact: Off-the-shelf computer based training or web based training courses, for example, will not be available for topics specific to the organization.

Trainees location

Are trainees local or spread over a large geographic area?

❑ Widely scattered; if the course is offered to individuals all over the world or in remote areas.
❑ Scattered; if the majority of trainees are located in main cities within the same country.
❑ Local; if the majority of trainees work within the same city/region.

Impact: Asynchronous delivery options, such as Video Conferencing are not practical if trainees are located in the same city/region.

Data presently (or planned to be) collected	Is the collection of data required? If yes, which data should be collected?
	Impact: A Learning Management System, for example, may provide an effective and economical option for collecting and compiling scores, surveys and comments.
Trainees work as a team using skills learned	Do trainees (on the job) work as a team when using the skills learned in the course?
	Impact: Delivery options, such as Classroom, that can simulate the working environment may be better suited for courses that require trainees to work as a team.
Dangerous to practice learned concepts	Is it dangerous for trainees to practice learned concepts – how to regulate a high voltage panel, for example?
	Impact: Delivery options, such as CBT, that can simulate dangerous activities may be better suited for the delivery of training.
Real equipment required for the delivery of training	Is on-the-job versus training equipment required for the delivery of training? In other words, does the course deal with the operation, maintenance or support of a specific piece of equipment - such as removing, installing or troubleshooting an engine, flying an airplane. If the answer is yes, than is this equipment required for the delivery of training?
	Impact: Complexity of the equipment has an impact on plausible delivery option.
Difficult to simulate the real equipment	Can the functionality of the equipment be simulated?
	❑ Very difficult; if a simulator/trainer is required. Flying an airplane or operating a crane, for example. ❑ Difficult; if it involves a complex process, such as diagnosing problems and repairing equipment. ❑ Moderate; if it involves the simulation of a software program, for example. ❑ Easy; if it involves the simulation of paper forms, for example.
	Impact: Complexity of the simulation has an impact on plausible delivery option. CBT or WBT, for example, are not suited for complex simulations required for the development of psychomotor skills.
Role play critical in meeting course objectives	Would trainees' benefit from role-playing and problem solving – i.e., experience various outcomes? How important is it towards achieving the learning objectives?
	❑ Required; if the course deals with attitude change and trainees value the opinion and experience of colleagues. ❑ Desired; if colleagues' opinion and experience add value to the course, but are not critical. ❑ Not required; if colleagues' opinion and experience has minimal impact on the course.

Impact: Synchronous delivery methods, such as Classroom, that allow the exchange and sharing of views are better suited for courses that deal with behavioral or attitude change.

How critical are guided discussions?

Would trainees' benefit from guided discussions, i.e., expressing opinions, sharing experiences and knowledge? How important is it towards achieving the learning objectives?

❑ Required; if course deals with attitude change; and trainees value the opinion and experience of colleagues.
❑ Desired; if colleagues' opinion and experience add value to the course, but are not critical.
❑ Not required; if colleagues' opinion and experience has minimal on the course.

Impact: Synchronous delivery methods, such as Classroom, that allow the exchange and sharing of views are better suited for courses that deal with behavioral or attitude change.

How critical are teaming exercises?

Would trainees' benefit from teaming exercises – i.e., work as a group to apply specific knowledge? How important is it towards achieving the learning objectives?

❑ Required; if trainees work as a team when using learned skills.
❑ Desired; if trainees do not work as a team; however, colleagues' opinion and experience add value to course.
❑ Not required; if colleagues' opinion and experience has minimal impact on the course.

Impact: Synchronous delivery methods, such as Classroom, that can simulate the working environment may be better suited for skills that are utilized in a team setting.

How critical is audio?

Would audio greatly enhance the learning experience, if the course is delivered in a self-study mode?

❑ Required; if course deals with language, music or radio communications, for example.
❑ Desired; if audio adds value to the learning experience.
❑ Not required, if audio has minimal impact on the learning experience.

Impact: Delivery options such as Multimedia CBT that allow the integration of audio in the training material, are better suited for courses that deal with language, music or radio communications.

How critical is full motion video?	Would full motion video greatly enhance the learning experience, if the course is delivered in a self-study mode?

❑ Required, if full motion video is required to transfer the knowledge, demonstrate a surgical procedure, for example.
❑ Desired; if video adds value to the learning experience.
❑ Not required, if video has minimal impact on the learning experience.

Impact: Delivery options such as Multimedia CBT that allow the integration of video in the training material, are better suited for courses that require realistic representation of events.

How critical are still images?	Would still images greatly enhance the learning experience, if the course is delivered in a self-study mode?

❑ Required, if pictures or still images are critical for transferring the knowledge, screen shots of a computer program, for example.
❑ Desired; if still images add value to the learning experience.
❑ Not required, if still images have minimal impact on the learning experience.

Impact: Delivery options that allow the integration of images in the training material are better suited for courses that require realistic representation of tools and equipment.

Trainers resistance to technology	Are instructors resistant to the use of technology for the delivery of training?

❑ High; if instructors are threatened by technology or believe that training can only occur in a classroom setting.
❑ Moderate; if instructors are not comfortable with technology.
❑ Low; if instructors are comfortable with technology or highly motivated to explore new options.

Impact: The effectiveness of synchronous delivery options, such as Internet Virtual Classroom, may be compromised if trainers are resistant to technology.

Trainees receptive to computers for learning	Are trainees receptive to the use of computers for the delivery of training?

❑ Yes; if trainees are using computers on-the-job or at home; and are confident in their ability to learn on their own.

Impact: The effectiveness of delivery options that utilize computers, such as CBT and WBT, may be compromised if trainees are resistant to technology.

Trainees reading ability	Is trainees' reading ability adequate?

Impact: Delivery methods such as Print, CBT and WBT, are not recommended for trainees with limited reading ability.

Trainees skill and proficiency level	How would you classify trainees' prior knowledge or skill of the course topic?

❑ Very diverse; if trainees have diverse educational background, knowledge or experience in this field.
❑ Diverse; if trainees have similar educational background but diverse knowledge or experience in this field.
❑ Uniform; if trainees have similar educational background, as well as knowledge and experience in this field.

Impact: Delivery options that allow trainees to advance at their own pace, such as CBT and WBT, are better suited for trainees with diverse knowledge and skill.

Trainees have access to computers	How would you rate trainees' access to computers?

❑ Adequate; if trainees have a computer at their desk or home.
❑ Limited; if trainees have to share the computer with others, at the learning center, for example.
❑ No access; if trainees have no or minimal access to a computer.

Impact: Methods that require computers for the delivery of training, such as EPSS, CBT and WBT, are not feasible if trainees have no access to a computer.

Trainees have access to multimedia computers	How would you rate trainees' access to multimedia computers?

❑ Adequate; if trainees have a multimedia computer at their desk or home.
❑ Limited; if trainees have to share the multimedia computer with others, at the learning center for example.
❑ No access; if trainees have no or minimal access to a multimedia computer.

Impact: Methods that require multimedia computers for the delivery of training, such as Multimedia CBT and WBT, are not feasible if trainees have no access to a multimedia computer.

Trainees have access to video conferencing	How would you rate trainees' access to video conferencing equipment?

❑ Adequate; if video conferencing facilities are readily available to trainees within the organization or through external suppliers.
❑ Limited; if trainees have to travel to gain access to the video conference facilities or availability is limited.
❑ No access; if trainees have no or minimal access to the video conference facility.

Impact: Methods that require video conference facility for the delivery of training are not feasible if trainees have no access to the equipment.

Trainees have access to Internet/Intranet	How would you rate trainees' access to the Internet and/or Intranet?

❑ Adequate; if trainees have a computer at their desk or home with access to the Internet and/or Intranet.
❑ Limited; if trainees have to share the computer connected to the Internet/ Intranet with others, at the learning center for example.
❑ No access; if trainees have no or minimal access to Internet or Intranet.

Impact: Methods that require the Internet or Intranet for the delivery of training, such as WBT and Internet Virtual Classroom, are not feasible if trainees have no access to the Internet or Intranet.

Minimum acceptable internet connection speed	What is the minimum acceptable connection speed to the Internet or Intranet (lowest common denominator)?

Impact: Delivery methods that require high bandwidth, such as Multimedia WBT, are not practical if trainees have a slow dial-up connection.

Application of learned skills	What is involved in the application of learned concepts/skills?

❑ Complex - decision making; if the course deals with problem solving and making decisions – how to repair a computer, for example.
❑ Cumbersome – computations; if the course deals with computations and/or report generation – preparing budgets or maintenance procedures for example.
❑ Critical; if correct application of knowledge is critical – i.e., errors have high consequences.
❑ Used infrequently; if the information in the course is used occasionally – how to file travel expense, for example.
❑ Used frequently; if the course deals with functions performed on daily basis or changing behavior/attitude.

Impact: Electronic Performance Support Tools may be better suited for complex or critical tasks, for example.

Step 3c. <u>Cost Factors</u>

% of course that changes each year	Estimate the percentage of the course content that may change each year. The estimate should be indicated as a percentage of the initial development effort [10% each year, for example]. Although a course may have a life span of three years, for example, 15% of the content may change each year.
Annual salary of individuals taking the course	Input the average annual salary of trainees [$40,000, for example]. Data on average annual salary of trainees may be obtained from personnel or payroll department.
Organization fringe benefits factor [%]	Input the organization's fringe benefits factor. This covers all expenses including employees' benefits such as medical and dental coverage; organization's contribution to pension and other funds; as well as general operational expenses such as rent, electricity, phone, security, etc. Fringe benefits factor generally varies between 25% to 75% of employees' salary. Data on the fringe benefits factor may be obtained from personnel or payroll department.
Average number of trainees per class	Estimate the average number of trainees per class, if course is delivered in a synchronous mode.
Average number of instructors per class	Estimate the average number of instructors/facilitators per class, if course is delivered in a synchronous mode.
% of trainees that travel to course	Estimate the percentage of trainees that would have to travel to and from the course site, if course is delivered in an instructor-led format.
% of instructors that travel to course	Estimate the percentage of instructors/facilitators that would have to travel to and from the course site, if course is delivered in an instructor-led format.
Average per diem cost per individual [per day]	This includes reimbursable daily expenses for lodging, meals and tips. Data on average per diem costs may be obtained from payroll or accounting department.
Average travel cost per individual	This includes round-trip air, bus or train fare, local automobile mileage, taxi or local public transportation costs. You may average these costs for participants in the course. However, the method used to compute the average should be documented. Data on average travel costs may be obtained from payroll or accounting department.
Average instructor annual salary	Input the average annual salary of instructors/facilitators, if course is delivered in a synchronous mode. Data on annual salary of instructors may be obtained from personnel or payroll department.
Average consulting fees per class	Input the average consulting fees per class, if external subject matter experts, instructors or facilitators deliver course in a synchronous mode.

If course exists, present delivery method	Select method presently used to deliver the training, if applicable.
Effort required to develop course	Indicate the effort required to develop the course, even if course already exists, as follows:

❑ Low – a course that deals with a simple subject. The course content can be adequately presented in text, graphics and simple animation, if developed in an asynchronous mode. That is, it does not require complex animation, simulation, audio or video.

❑ Medium – a course that deals with a moderately complex subject. The course content requires text, graphics, animation, simple simulations, some audio but minimal video, if developed in an asynchronous mode.

❑ High – a course that deals with an abstract/complex subject that is difficult to comprehend. The course content requires text, graphics, complex animations and simulations as well as audio and video if developed in an asynchronous mode.

Average cost of room rental per class	Estimate facilities costs per class (hotel or conference center room rental, for example), if course is delivered in an instructor-led format.
# of administrative required [per class]	Estimate the number of days per class required to administer the course, if delivered in an asynchronous mode. This may include registering trainees, booking a room, arranging for equipment, etc. Note that this refers to working days and not calendar days.
Cost of computer/hardware required by course	Cost of special equipment (computers or trainers, for example] required for training. If remodeling the classroom is required, then the costs should also be included.

Step 4. To view and/or modify the preliminary analysis, click on the 📁**Course Analysis** folder. A list of available courses is presented.
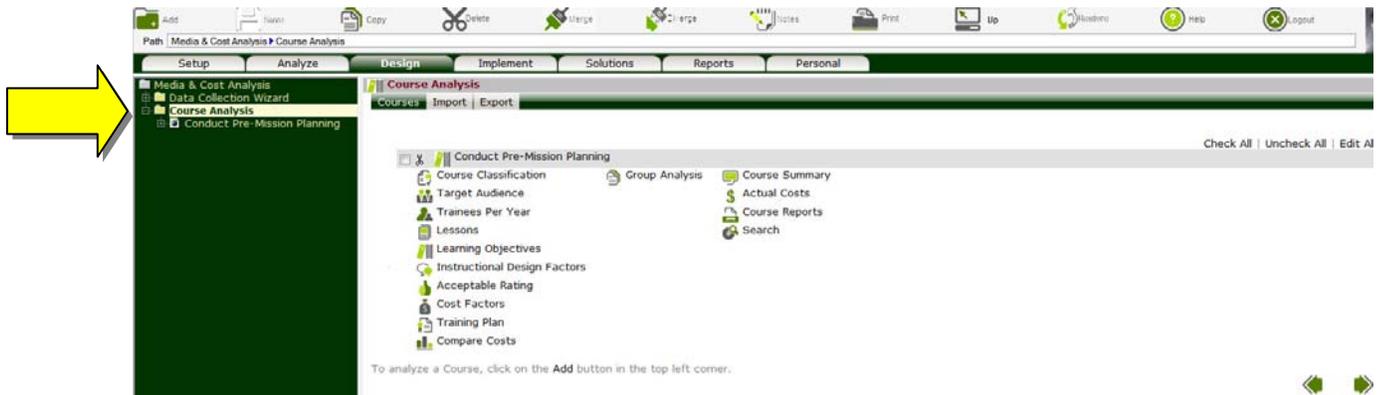
Step 5. Click on ⊞ next to the 📁**Course Analysis** folder to expand and the ⊞ next to the 🌐**(course title)** node to view available options.
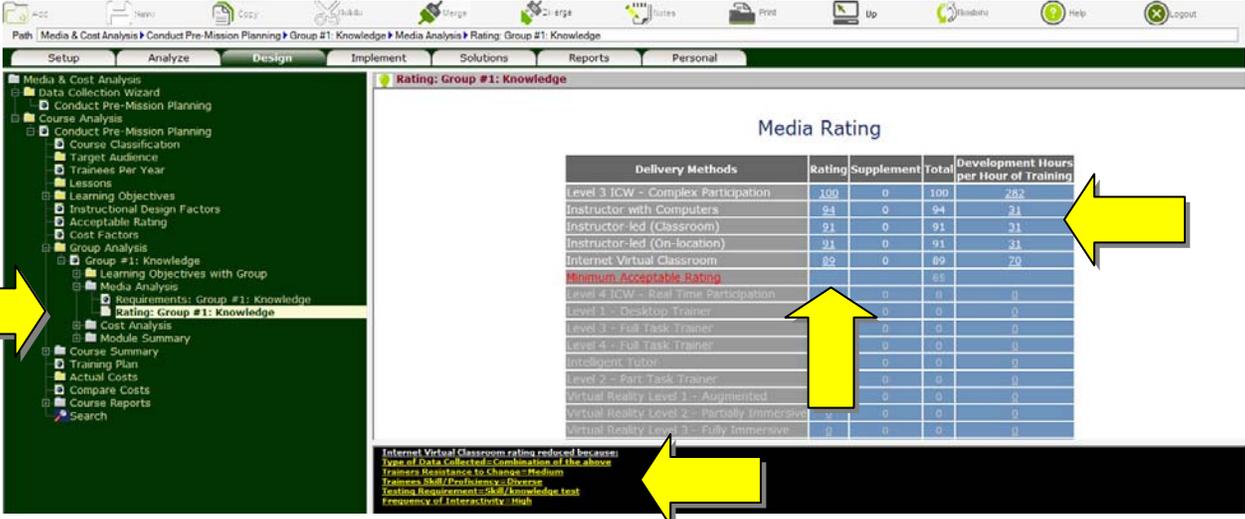
Step 6. To view the results of the preliminary analysis, click on the ⊞ next to the 📁**Group Analysis** folder to expand. A list of the sections within the course is presented. Only one group is generated by the 📁**Data Collection Wizard**.

Step 7. Each group (section) is analyzed separately to determine the most economical delivery option that meets organizational, learning and learners' needs. Click on ⊞ next to the 🌐**(group title)** node to display the analysis steps.

The results for each module are presented under the 📁**Module Summary** folder. The results from all modules are combined under the 📁**Course Summary** folder to determine the right blend of delivery options for the course.

Step 8. To view the rating of plausible delivery options, click on the ⊞ next to the 🗀**Media Analysis** folder to expand and then click on the 📄**Rating** node. Plausible delivery options are rated in this screen to reflect their ability to meet organizational, learning and learners' needs. A 100% rating indicates that the delivery option meets all stated requirements. A 0% rating indicates that the delivery option did not meet a critical requirement and should not be considered any further. To find why a delivery option is not recommended or why its rating has been reduced, click on the rating next to the delivery option. The reasons are presented in window at the bottom of the screen – based on provided information.

Based on industry averages, the number of hours needed to develop one hour of training is also presented next to each media.

Step 9. To view a detailed breakdown of the costs of plausible delivery options, click on the ⊞ next to 📁 **Cost Analysis** folder to expand and then click on the 🔵 **Summary** node. ADVISOR automatically selects the most effective delivery option for each group. To view and change selected options, click on the 🔵**Delivery Options** node.

Step 10. You may also view direct (budget related) costs, indirect (productivity related) costs, savings that may result from utilizing alternate delivery options, start-up and recurring costs as well as personnel required to design, develop, deliver, administer, maintain and support this module by clicking on corresponding tabs.

To view graphical representations of the results, click on the 📄**Distribution Charts**, 📄 **Direct/Indirect Charts** or 📄**Break Even Point Charts** nodes.

Step 11. To find out how each item (development costs, for example) is computed, click on the corresponding (🔵**Development**) node. You may also edit any field and click Save to re-compute.
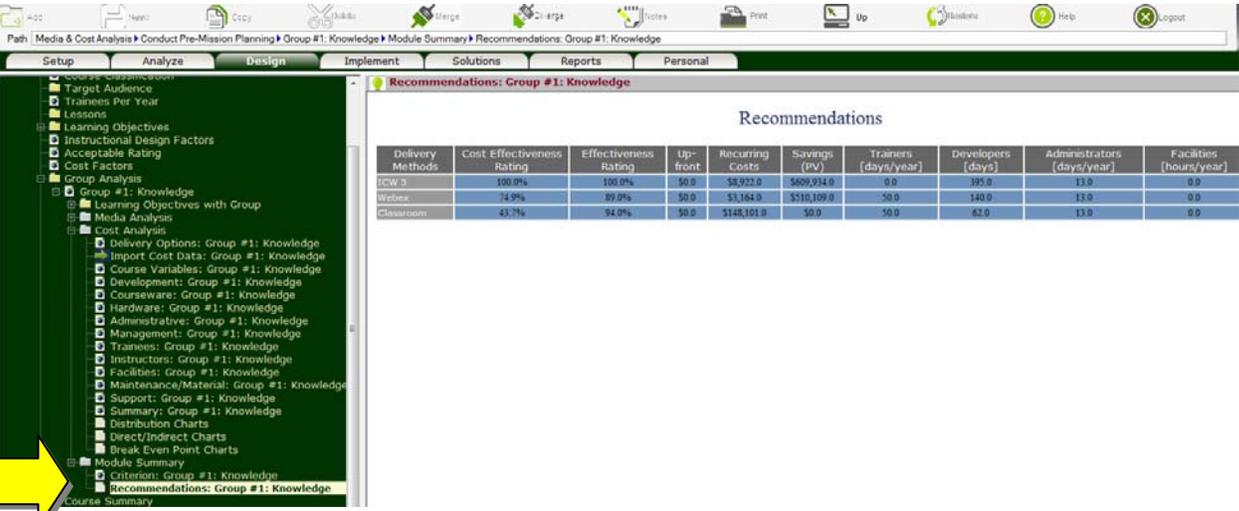
Step 12. The ratings as well as the costs of plausible delivery options are taken into consideration when making recommendations. To find out the most cost effective delivery option, click on the ⊞ next to the 📁**Module Summary** folder to expand.

Step 13. Two criterions may be used to order plausible delivery options:

➢ Most Economical. Orders delivery options that meet organizational, learner and instructional needs [under the 📄 **Rating** node under the 📁**Media Analysis** folder] from least to most expensive.

➢ Most Cost Effective. Orders delivery options that meet organizational, learner and instructional needs [under the 📄 **Rating** node under the 📁 **Media Analysis** folder] from most to least cost effective. In other words, based on their effectiveness to cost ratio.

To select the criterion, click on the 🔵**Criterion** node, select the desired option and click Save.

Step 14. To view recommended delivery options for this group, click on the 📄**Recommendations** node. They are presented from most to least favorable.

Step 15. If training program/course has multiple sections, ADVISOR will recommend the most favorable delivery option (Step 14.) within each group. To create and compare alternate blends of delivery options, click on the ⊞ next to the **Course Summary** folder to expand.

Step 16. Two blends are automatically created by ADVISOR, namely: Currently Used and ADVISOR Recommendation. To view options recommended by ADVISOR, for example, click on ⊞ next to **Delivery Options** folder to expand, click on ⊞ next to **ADVISOR Recommendation** node to expand, and click on the **Delivery Methods** node to view delivery options recommended by ADVISOR.

To create additional blends, click on **Delivery Options** folder, click Add (button), input the delivery option title (analyst recommendations, for example) and click Save. Click on ⊞ next to the **(delivery option)** node that was created, click on the **Delivery Methods** node, select the desired blend of delivery options and click Save.

Step 17. Click on **Base of Comparison** node, select delivery option to be used as base of comparison and click Save. In general, the Currently Used or method commonly used for the delivery of training should be selected as the base of comparison.

Step 18. To view detailed breakdown of the costs of alternate blends of delivery options for training program/course, click on the **Cost Distribution** node. You may also view direct (budget related) costs, indirect (productivity related) costs, savings that may result from utilizing alternate delivery options, start-up and recurring costs as well as personnel required to design, develop, deliver, administer, maintain and support course by clicking on corresponding tabs.

To view graphical representations of the results, click on the **Distribution Charts**, **Direct/Indirect Charts** or **Break Even Point Charts** nodes.

Step 19. Once you have had the opportunity to evaluate and compare the effectiveness as well as the costs of alternate blends of delivery options, an option should be recommended by clicking on the **User Recommendation** node, selecting the desired delivery option and clicking Save.

Step 20. A comprehensive business case report that documents process used to rate the effectiveness and compute the costs of alternate delivery options can be generated by clicking on the **Course Report** node, selecting items to be included and clicking the Save button. The report in html format is presented in a new window. You may print or save the report using the corresponding functions in your Browser.

Since the report is in html format, you can quickly advance to any section by clicking on the corresponding title in Table of Contents. To return to ADVISOR, close the Course Report window.

Remember that context sensitive help is also available for each screen by clicking on the Help (button). Enjoy!

4. Approach #2: Detailed Analysis

Objective: To determine the most economical blend of delivery options that meets organizational, learning and learners' needs.

Step 1. To analyze a new course, click on the 📁**Course Analysis** folder.

Step 2. Click on Add (button) (top left corner).

Step 3. Input requested data and click Save to create the course.

Note: You may share your analysis with colleagues (i.e., Users assigned to the same Client) by clicking on [Sharing] tab, placing checkmarks next to their names and click Save.

Step 4. Click on ⊞ next to the 🔵**(course title)** to expand.

Step 5. Click on 🔵**Import Course Templates** node, select desired Templates and click Save. You may view and edit imported data by clicking on the 🔵**Instructional Design Factors** and 🔵**Cost Factors** nodes.

Note: If no Templates are available, the 🔵**Import Course Templates** node will not be presented.

Step 6. Click on 📁**Target Audience** folder. To select audience for this course, place checkmarks next to the appropriate jobs (positions) and click Save.

Note: If Job Profiles have not been defined, the 📁**Target Audience** folder will not be presented.

Step 7. Click on 🔵**Trainees per Year** node, input the number of trainees in each year and click Save.

Step 8.   Click on 📁**Learning Objectives** folder. To add a new learning objective, click on Add (button) (top left corner), input required information and click Save. The following issues should be considered when completing this section:

Learning Objective/Outcome:
➢ Software - refers to the ability of individuals to use a software application, an operating system, a legacy system or an information management system effectively and efficiently. Learning a software application requires the use of both cognitive and psychomotor skills. Select Software as a primary learning objective/outcome if the purpose of the learning objective is to provide personnel with the knowledge, comprehension and skills needed to use a software application and/or operating system. For example, "Personnel will be able to type and format a letter", "Personnel will be able to import charts into an MS Word document".

➢ Knowledge - refers to the ability of individuals to recall, recognize, understand, translate and interpret information as well as use learned material in specific instances. Select Knowledge as a primary learning objective/outcome if the purpose of the learning objective is to enable personnel to name parts of an object, point out certain object, state definition, classify an object into a category, contrast two objects, apply theoretical knowledge to perform a task or use a particular set of procedures. For example, "Personnel will be able to explain and describe the rules and procedures for lodging a complaint within the department."

➢ Mental Skills - refers to the ability of individuals to compare, contrast and break down a problem in order to arrive at a solution. In other words, issues that involve thinking, reasoning, analyzing, judging and inferring. Select Mental Skills as the primary learning objective/outcome if the purpose of the learning objective is to provide personnel with the skills to select and organize alternatives, or derive solutions to a problem. For example, "Personnel will be able to choose the most effective instructional strategy for specific learning outcomes", "Personnel will be able to solve mathematical formula by combining previous learned rules".

➢ Psychomotor Skill - refers to the ability of individuals to perform a physical task. A task that requires physical exertion or manipulation of an object. In other words, tasks that require physical movement. Skills are learned capabilities whose outcomes are demonstrated through speed, accuracy and quality of the performed task. Select psychomotor Skill as a primary learning objective/outcome if the purpose of the learning objective is to provide personnel with "practical skills" or "motor skills" that require perception, decision and action to perform the task. For example, "Personnel will be able to climb a telephone pole", "Personnel will be able to repair a flat tire".

➢ Attitude - refers to individuals' personal beliefs and/or preferences towards an object, situation or person. In other words, their mental state that influence behavior, choices and opinions. Select Attitude as a primary learning objective/outcome if the purpose of the learning objective is to change, in some way, the attitudes, behavior, preferences and/or value systems of personnel. For example, "Personnel will demonstrate positive attitudes and behaviors towards new work procedures", "Personnel will be more sensitive to colleagues with varied cultural backgrounds".

If a learning objective has more than one learning objective/outcome, then it should either be divided into multiple learning objectives or the most dominant category selected.

Classification:

To facilitate the process of grouping objectives with similar characteristics, each learning objectives can be classified in line with Bloom's Taxonomy. An [Auto Allocate] tab/function is also provide at the **Learning Objectives** folder to automatically group learning objectives based on learning outcome and classification.

Group:

Although it is feasible to analyze each learning objective separately to determine the most cost effective option for the delivery of training, the process can be extremely cumbersome. To drastically reduce the time needed to identify the most effective blend of delivery options without compromising the integrity of the analysis, learning objectives with similar outcome and characteristics can be grouped and analyzed as a single unit (group).

Indicate the group in which the learning objective should be placed. Please note that learning objectives can only be placed in groups with similar learning outcomes. That is, you may place all Knowledge objectives within the same group, but cannot place Knowledge objectives with objectives that deal with Mental or Psychomotor Skills.

Step 9. Click on **Instructional Design Factors** node, input the required information under [Content], [Audience], [Limitations], [Hardware] and [Application] tabs and click Save.

Note: You do not have to answer all questions. Recommendations are based on provided information.

Step 10. Click on **Cost Factors** node, input the required information under [Trainees] tab and click Save.

If training program/course is divided into multiple Groups (Step 8.), each group is analyzed separately to determine the most economical delivery option that meets your needs. The results for each group are presented under the **Module Summary** folder. Once all groups have been analyzed, plausible options from each group can be combined to determine the most economical blend for training program/course under the **Course Summary** folder.

To view the groups within the course, click on the ⊞ next to **Group Analysis** folder to expand. Steps 11 through 34 should be repeated for each Group.

Step 11. Click on ⊞ next to the **(group title)** node to expand.

Step 12. Click on **(group title)** node, input required information and click Save.

Step 13. Click on ⊞ next to the **Media Analysis** folder to expand.

Step 14. Click on the **Requirements** node input or update the required information under [Content], [Display], [Design], [Activity], [Environment], [Safety], [Evaluation] and [Limitation] tabs and click Save.

Note: If Instructional Templates are not available, you can select under the Template field and click Save to import.

Step 15. To view the rating of plausible delivery options, click on the **Rating** node. Plausible delivery options are rated in this screen to reflect their ability to meet organizational, learning and learners' needs. A 100% rating indicates that the delivery option meets all stated requirements. A 0% rating indicates that the delivery option did not meet a critical requirement and should not be considered any further. To find why a delivery option is not recommended or why its rating has been reduced, click on the rating next to the delivery option. The reasons are presented in window at the bottom of the screen – based on provided information.

Based on industry averages, the number of hours needed to develop one hour of training is also presented next to each media.

Step 16. To view the costs of alternate delivery options, click on ⊞ next to the 📁**Cost Analysis** folder to expand.

Step 17. Click on 🔵**Delivery Options** node, select delivery options to be compared, input title, indicate current delivery option as well as base for comparison and click Save.

Step 18. Click on 🔵**Import Cost Data** node, select the desired Templates and click Save. You may view and edit imported data by clicking on the corresponding node under the 📁**Cost Analysis** folder.

Note: If Cost Templates are not available, the 🔵**Import Cost Data** node will not be presented.

Step 19. Click on 🔵**Course Variables** node, input the required information for each delivery option and click Save.

Step 20. To estimate development costs, click on 🔵**Development** node, input the required information for each delivery option and click Save.

Step 21. To estimate hardware costs, click on 🔵**Hardware** node, input the required information under [Purchase] and [Operation] tabs for each delivery option and click Save.

Step 22. To estimate administrative costs, click on 🔵**Administrative** node, input the required information for each delivery option and click Save.

Step 23. To estimate management costs, click on 🔵**Management** node, input the required information for each delivery option and click Save.

Step 24. To estimate trainees' costs, click on 🔵**Trainees** node, input the required information for each delivery option and click Save.

Step 25. To estimate instructors' costs, click on 🔵**Instructors** node, input the required information for each delivery option and click Save.

Step 26. To estimate facilities' costs, click on 🔵**Facilities** node, input the required information for each delivery option and click Save.
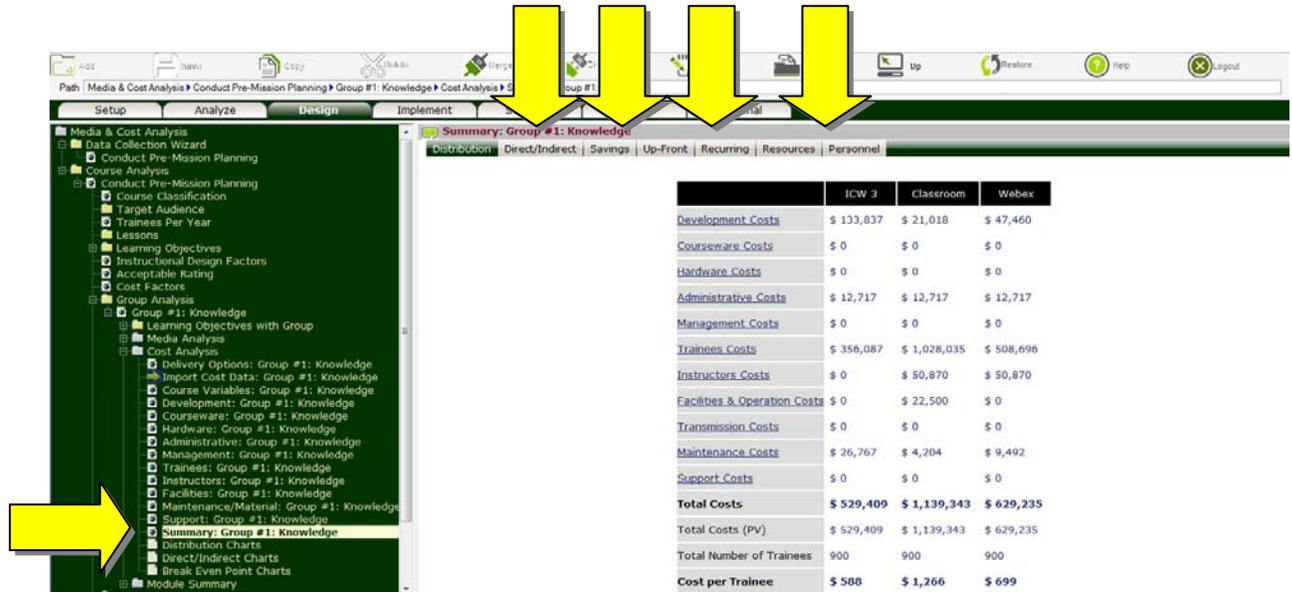
Step 27. To estimate transmission costs, click on 🔵**Transmission** node, input the required information for each delivery option and click Save.

Step 28. To estimate maintenance costs, click on 🔵**Maintenance/Material** node, input the required information for each delivery option and click Save.

Step 29. To estimate support costs, click on 🔵**Support** node, input the required information for each delivery option and click Save.

Step 30. For a detailed breakdown of the costs of plausible delivery options, click on the ⊕**Summary** node. You may also view direct (budget related) costs, indirect (productivity related) costs, savings that may result from utilizing alternate delivery options, start-up and recurring costs as well as personnel required to design, develop, deliver, administer, maintain and support this module by clicking on corresponding tabs.

To view graphical representations of the results, click on the ▤**Distribution Charts**, ▤**Direct/Indirect Charts** or ▤**Break Even Point Charts** nodes.
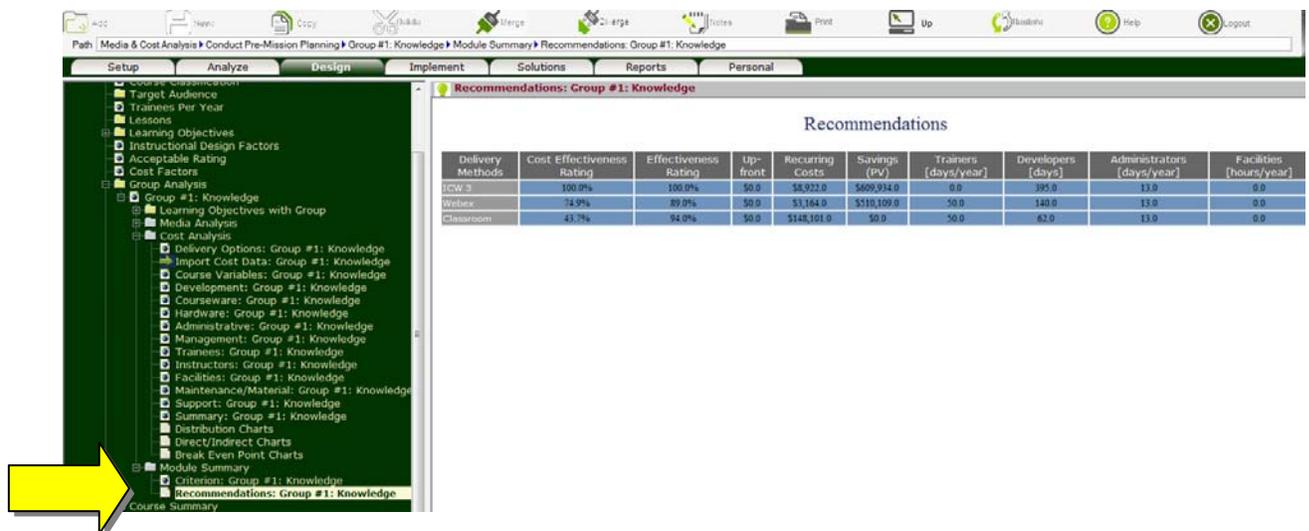
Step 31. The ratings as well as the costs of alternate delivery options are taken into consideration when making recommendations. To find out the most cost effective delivery option, click on ⊞ next to the 📁**Module Summary** folder to expand.

Step 32. Two criterions may be used to order plausible delivery option:

➢ Most Economical. Orders delivery options that meet organizational, learner and instructional needs [under the 📄**Rating** node under the 📁**Media Analysis** folder] from least to most expensive.

➢ Most Cost Effective. Orders delivery options that meet organizational, learner and instructional needs [under the 📄 **Rating** node under the 📁 **Media Analysis** folder] from most to least cost effective. In other words, based on their effectiveness to cost ratio.

To select the criterion, click on the 🔘**Criterion** node, select the desired option and click Save.

Step 33. To view recommended delivery options for the group, click on the 📄**Recommendations** node. They are presented from most to least favorable.

Step 34. If training program/course has multiple sections, ADVISOR will recommend the most favorable delivery option (Step 34.) within each group. To create and compare alternate blends of delivery options, click on ⊞ next to the 📁**Course Summary** folder to expand.

Step 35. Two blends are automatically created by ADVISOR, namely: Currently Used and ADVISOR Recommendation. To view options recommended by ADVISOR, for example, click on ⊞ next to 📁**Delivery Options** folder to expand, click on ⊞ next to 🔵**ADVISOR Recommendation** node to expand, and click on 🔵**Delivery Methods** node to view delivery options recommended by ADVISOR.

To create additional blends, click on 📁**Delivery Options** folder, click Add (button), input the delivery option title (analyst recommendations, for example) and click Save. Click on ⊞ next to the 🔵 **(delivery option)** node that was created, click on the 🔵**Delivery Methods** node, select the desired blend of delivery options and click Save.

Step 36. Click on 🔵 **Base of Comparison** node, select the delivery option to be used as base of comparison and click Save. In general, the Currently Used or method commonly used for the delivery of training should be selected as the base of comparison.

Step 37. For detailed breakdown of the costs of alternate blends of delivery options for training program/ course, click on the 🔵**Cost Distribution** node. You may also view direct (budget related) costs, indirect (productivity related) costs, savings that may result from utilizing alternate delivery options, start-up and recurring costs as well as personnel required to design, develop, deliver, administer, maintain and support course by clicking on corresponding tabs.

To view graphical representations of the results, click on the 📄**Distribution Charts**, 📄 **Direct/Indirect Charts** or 📄**Break Even Point Charts** nodes.

Step 38. Once you have had the opportunity to evaluate and compare the effectiveness as well as the costs of alternate blends of delivery options, an option should be recommended by clicking on the 🔵 **User Recommendation** node, selecting the desired delivery option and clicking Save.

Step 39. A comprehensive business case report that documents process used to rate the effectiveness and compute the costs of alternate delivery options can be generated by clicking on the 📄**Course Report** node, selecting items to be included and clicking Save. The report in html format is presented in a new window. You may print or save the report using the corresponding functions in your Browser.

Since the report is in html format, you can quickly advance to any section by clicking on the corresponding title in Table of Contents. To return to ADVISOR, close the Course Report window.

Remember that context sensitive help is also available for each screen by clicking on the Help (button). Enjoy!