

# Single-sourcing Online Help and Training Manuals

Rob Houser  
User First Services, Inc.  
rob@userfirst.net

## Abstract

*With advances in single-sourcing, online help and training manuals no longer need to be produced separately. By combining the source information in a tool like RoboHelp, help authors and trainers can reduce duplicated information and save time producing both documents. This paper describes a single-sourcing process that combined a real help system and training manual using RoboHelp.*

**Keywords:** *online help, training, single-sourcing, RoboHelp*

## Introduction

Online help and training manuals are more alike than they are different—they derive information from the same sources, they explain how to use a product to do real work more effectively, and they are built around concepts and procedures. Yet online help and training manuals are often developed with different tools by different groups of people working independently. The end result is two different ways for users to answer questions about a product: one is through the online help provided with the product and the other is through the training manual, either used in the classroom or as self-guided training.

Single-sourcing can be mutually beneficial to writers and trainers, if they agree to work closely together and focus on their unique contributions to the user assistance. Among other strengths, writers are experts at organizing documents, writing procedures and reference information, and editing

documentation for grammatical and stylistic consistency. They know how to design documents that not only looks professionally produced but are designed for accessibility, understandability, and reuse. [1] Trainers are experts at identifying conceptual information required to expand the users' understanding of a task, constructing interactions that allow users to practice that task, and evaluating whether users and the organization have benefited from the training. They know how to guide users from their current abilities towards greater expertise. [2]

Our challenge was to leverage the strengths of help authors and trainers by single-sourcing an existing online help system and printed training manual using RoboHelp. Our goal was to reduce duplicated information and effort without lessening the effectiveness of the help or the training.

## Analyzing the Existing Documents

The first step in the single-sourcing process was to evaluate the existing online help and training manual for organization, content, layout, and style. During the evaluation, we placed the features of each document into three categories:

- **Shared** - Similar enough to be the same in the merged solution
- **Unique** – Significantly different and vital to maintain separately
- **Flexible** – Doesn't matter if the feature is changed or discarded to make the merged solution more effective

## Organization

For organization, we primarily looked at the table of contents.

### Flexibility of Help

Help allows random access to its information through context-sensitivity, links from other topics, table of contents, index, and full-text search. In other words, most users don't have to (and usually don't want to) read the help from start to finish. [3] Therefore, the organization of the help is somewhat more flexible than the organization of the training manual where information is delivered in a highly sequential manner. Training manuals are often organized to reflect a top-down approach, to reinforce a workflow, to categorize information so it can be presented in smaller chunks, or to introduce concepts and tasks with increasing complexity as the learners progress through the training. [4]

In our case, we changed the organization of the help to accommodate the single-sourcing of the training manual.

Initially, the organization of the existing help was system-oriented, reflecting the menus in the application. The system orientation was used for the help because the help was created along with the product much earlier than the training.

We re-organized the help around topical areas in the order that the topics were introduced through the training (See Figure 1). The change was an improvement to the help because users could already access the help through context-sensitive help, which covered the system view of the help. By changing the table of contents in the help, we provided users with another way to access the help information and reinforced the training by using the same organization which would look familiar to students who had completed the training.

?	Welcome
?	What's New in Release 2.1
📖	Getting Started
?	How to Login to Eagle
?	Navigating and Working Efficiently
?	Using Help in Eagle
📖	Company Setup
?	Conducting the Discovery Interview
?	Creating a Company
?	Validating a Company
📖	Earnings
📖	Accumulators
📖	Deductions
📖	Reports
📖	Troubleshooting Wizards
?	Company does not appear in list
?	Cannot edit company details
?	Technical Support

**Figure 1: Topical table of contents for help**

RoboHelp allows us to maintain separate tables of contents for the help and the training manual; however, managing two separate tables of contents in an active project is difficult to do and would require additional post-production work each time we wanted to generate the training manual.

### Unique Training Components

Training manuals contain three main types of information that online help typically does not: (1) *guidance*, which includes learning objectives, demonstrations, tips and best practices, review, and feedback, (2) *practice*, which allows the learner to apply new knowledge to a new situation to increase knowledge transfer and retention, and (3) *assessment*, which measures the effectiveness of learning. [4] All of these components were present in our existing training manual.

The training used a topical organization because the application did not dictate any particular high-level workflow (See Figure 2). Each topic in the training manual started with learning objectives for the topic (module), a brief introduction to the module, one or more key concepts needed to understand the tasks, procedures, a recap of the main points covered

in the module, review questions about the module, and an exercise that built on a running scenario used throughout the course. The unique training components are highlighted with bold formatting in Figure 2.

<b>Course Overview</b>
<b>Course Objective</b>
Module 1: Login to Eagle
Module 2: Company Setup
<b>Objectives</b>
<b>Overview</b>
<b>Understanding the Setup Process</b>
How to Conduct Discovery Interviews
How to Set Up a New Company
How to Validate a Newly Created Company
<b>Recap</b>
<b>Review</b>
<b>Exercise</b>
Module 3: Earnings
<b>Earning and Deduction Factors</b>
<b>System Calculation Formulas</b>
<b>Calculation Formulas and Factor Fields</b>
How to Set Up Earning Types
<b>Recap</b>
<b>Review</b>
<b>Exercise</b>
Module 4: Deductions
Module 5: Reports
<b>Practice</b>
<b>Answers to Review Questions</b>
<b>Course Assessment</b>

**Figure 2: Training table of contents**

Including the unique training components was easily accomplished through single-sourcing. We simply inserted additional topics into the table of contents for each of the unique training components and used RoboHelp’s conditional build tag feature to turn off those topics when the help was generated.

**Merging the Table of Contents**

Figure 3 shows how we merged the help and training manual within the same topical organization. The unique training components were hidden when the help was generated. Some topics (both concepts and tasks) only appeared in the documentation, which was more comprehensive than the training. Everything that was not marked as belonging to either help or training appeared in both the help and the training manual. When possible, we tried to include the conceptual topics from the training in the help.

Welcome [Help only]
What’s New in Release 2.1 [Help only]
Course Overview [Training only]
Course Objectives [Training only]
Getting Started
Company Setup
Module Objectives [Training only]
Module Overview [Training only]
Company Setup Process
Conducting Discovery Interviews [Help only]
Creating a Company
Validating a Company
Recap [Training only]
Review [Training only]
Exercise [Training only]
Earnings
Accumulators
Deductions
Reports
Troubleshooting Wizards [Help only]
Company does not appear in list [Help only]
Cannot edit company details [Help only]
Technical Support [Help only]

**Figure 3: Merged table of contents**

**Content**

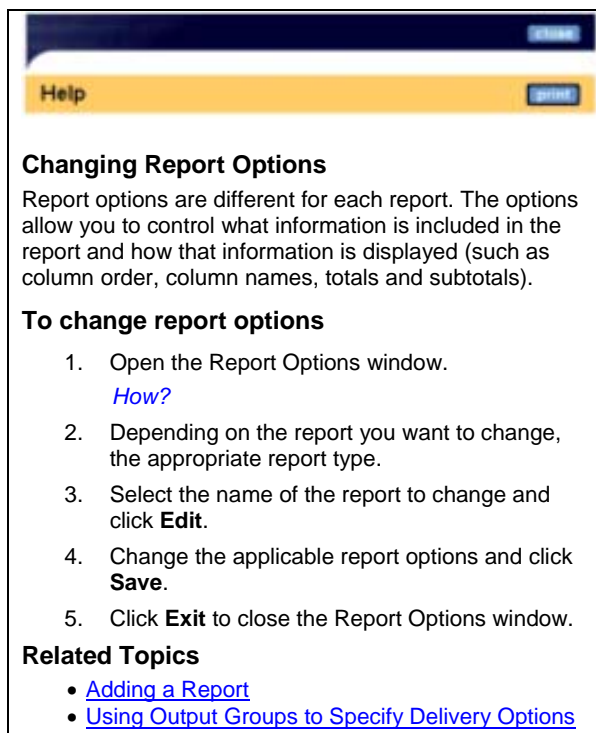
To analyze the content, we looked at help topics and manual pages, especially those covering the same product areas. For instance, what are the differences between how the help explains how to create a company versus how the training explains the same procedure? To keep track of the differences, we used highlighters to mark the unique information in the help and the training manual. At first, everything looked unique, but on closer inspection it was clear that the procedures and concepts were basically the same.

**Procedures**

Trainers often use the user documentation as the basis of the procedural portion of their training manuals. They take the generic procedures and add context to them with running scenarios to help the users apply the procedure to real world situations. The problem with this approach is that after the

trainer creates the training manual, the procedural information is now duplicated with no easy way to reflect updates made to the online help. The two documents can quickly become out-of-sync. Because many training manuals are less formal than the user documentation, the training manual often receives updates after the product release date, so it becomes more up-to-date than the online help, although it is not designed for reuse after the training experience.

Figure 4 shows a typical help procedure. In user documentation, the procedures are often generic—they do not reflect the user’s specific situation because they are not aware of it. For example, when users view the topic “Changing report options” they probably know which report they want to change, but the help can only provide non-specific directions (See steps 2, 3, and 4 in Figure 4) rather than details.



**Figure 4: Example of help procedure**

In contrast, training manuals present procedures within a specific context, usually a running scenario used throughout a module or

even the entire class. The scenario helps students make sense of the procedures by applying them to real situations. The scenario also provides sample data to use when following the procedures, which allows the trainers to keep all students on the same path and helps them evaluate the students final results. In many cases, trainers include screen shots to both relate the training manual to the application and show the sample data within the context of the screen.

The training procedure in Figure 5 illustrates the unique training content embedded in the procedure: (1) an introduction providing orientation to the training scenario, (2) specific data to use when completing the procedure integrated with the steps, and (3) screen shots to provide coordination between the training and the product. Often tips and best practices were also included in the training procedures.

Through our content analysis, we saw that the procedures from the help and training were really the same—the training manual just provided more information within the procedures about how and why to complete the training. We designed our source system to accommodate this additional training information and thereby eliminated the need for two different people to research and write the same procedure. Although we combined the two types of procedures, we also wanted to keep the chunks of information separate enough to ensure that the writer of the procedure did not change the information added by the trainer.

Figure 6 shows an example of how both types of procedures were combined. The text highlighted with a light gray shading appears in both the help and the training manual with the exception of the “Related Topics” heading and the list of topic links that follows it, which only appears in the help. The rest of the text appears only in the training manual. All of the content shown in Figure 6 is stored in a single RoboHelp topic.



## Module 5: Reports

In ProductX, reports are used both internally and by the customers to get a view into a company's payroll and employee information. Reports include the Payroll Register and Employee Profile Report as well as some output you might not consider to be a report such as checks and W2 forms.

In this module, you will learn how to:

- View and change report options
- Add a new report to a company
- Create output groups to manage report delivery
- Run an archived report
- Re-generate an archived report to use updated payroll data



## How To Change Report Options

Report options allow you to control the content and layout of reports. In this walkthrough, you will continue to set up the Jockey Hollow Bar and Grill company. You will select the Summary report and change the report options to:

- Print a condensed summary
- Breakout the state withholding tax information on the totals page
- Print two copies of the report

- 1 Open the Jockey Hollow Bar and Grill company.
- 2 From the menu bar, select **Reports > Report Options**. The Report Options window appears.
- 3 Click the **Select Report Type** drop-down to view the report types available.

There are five report types available: Exports, ProductX Reports, GL Reports, Labor Reports, and Standard Reports.

- 4 Accept the default **All Report Types** after you finish viewing the report types available.

Once you select a report type, the reports of that type will display in the grid below. Most reports are standard reports.

After selecting a report type, select a report from the grid

Required reports cannot be removed from a company.

	Type	Req'd
All Report Types	Standard	<input checked="" type="checkbox"/>
Exports	Standard	<input checked="" type="checkbox"/>
Freedom Reports	Standard	<input checked="" type="checkbox"/>
GL Reports	Standard	<input checked="" type="checkbox"/>
Labor Reports	Standard	<input checked="" type="checkbox"/>
Standard Reports	Standard	<input checked="" type="checkbox"/>
W2	Standard	<input checked="" type="checkbox"/>
Checks	Standard	<input checked="" type="checkbox"/>
Delivery Page	Standard	<input checked="" type="checkbox"/>
Worksheet	Standard	<input checked="" type="checkbox"/>
New Hire	Standard	<input checked="" type="checkbox"/>
W2 Recon Report	Standard	<input checked="" type="checkbox"/>
Direct Deposit Register	Standard	<input checked="" type="checkbox"/>

- ❑ The grid below the Select Report Type: field displays all standard reports that a customer will receive with their payroll.
- ❑ Required reports are designated with a check in the **Req'd** field and represent report outputs that all companies of a service provider and/or input method type must receive without exception.

- 5 Select the **Summary Report** from the list of available reports.

**Figure 5: Example of procedure from training manual**

## Changing Report Options

Report options are different for each report. The options typically allow you to control what information is included in the report and how that information is displayed (such as column order, column names, totals and subtotals).

In this walkthrough, you will continue to set up the Jockey Hollow Bar and Grill company. You will select the Summary report and change the report options to:

- Print a condensed summary
- Breakout the state withholding tax information on the totals page
- Print two copies of the report



Make sure that the **Jockey Hollow Bar and Grill** company is still open.

1. Open the Report Options window by selecting **Reports > Report Options**.
2. Depending on the report you want to change, select the corresponding report type.



Select **All Report Types**.

Once you select a report type, the reports of that type will display in the grid below. Most reports are standard reports.

After selecting a report type, select a report from the grid

Required reports cannot be removed from a company.

Report Name	Type	Req'd
Freedom Reports	Standard	✓
GL Reports	Standard	✓
Labor Reports	Standard	✓
Standard Reports	Standard	✓
Exports	Standard	✓
Checks	Standard	✓
Delivery Page	Standard	✓
Worksheet	Standard	✓
New Hire	Standard	✓
W/2 Recon Report	Standard	✓
Direct Deposit Register	Standard	✓

The grid below the Select Report Type list displays all of the reports that a company is set up to receive as a result of payroll processing.

3. Select the name of the report to change and click **Edit**.



Select the **Summary Report**.

4. Change the applicable report options and click **Save**.



Sort the report by Department for the first sort field and Employee Number for the second sort field. Place a page break after each department and check the option to provide a sub total with each department.

5. Click **Exit** to close the Report Options window.

### Related Topics

- [Adding a Report](#)
- [Using Output Groups to Specify Delivery Options](#)

**Figure 6: Example of merged help and training procedure**

### **Concepts**

Our analysis also showed that most conceptual explanations could be shared between the help and training manual without any revision of the information. In the existing help system, the few conceptual topics that existed either appeared under the Getting Started section or were grouped with their related procedures. Many concepts in the training were not included in the existing help. The training manual usually introduced a module with concepts and then transitioned to the related procedures. Occasionally, concepts were included as a sidebar to a procedure.

The concepts are another example of the value add to the help gained by merging with the training. Concepts are important because they help the users/learners decide when to use a procedure, solve new problems, and reconstruct the procedures. [5] Trainers are especially skilled at providing conceptual information in a context that users/learners can understand. By sharing the procedures and concepts, help authors and trainers were able to use a divide and conquer approach where the help author created the procedures and the trainer created the conceptual explanations.

### **Layout**

Consistency of layout is important when merging two different documents because some information will be hidden based on the desired output, leaving a gap in the generated manual that should not be noticed by the user. Also, information must appear in a consistent place because the writers and trainers need to know where their content appears for editing purposes.

In some cases, the layout of both manuals had to change slightly to accommodate generating both manuals from the same source material.

If you compare the layout of the original training manual in Figure 5 with the single-sourced help and manual in Figure 6, you can see some of the changes made to the layout of

the training manual to benefit the help system. For instance, the icon next to the heading was removed; the procedure was broken down into the step, feedback, and student data to use for the training to complete the step; the graphic was left-justified with the numbered list; and an icon was added to make the sample data for the training stand out from the rest of the procedure.

These small changes to the training manual were partially due to limitations of RoboHelp and partially to make it easier for the help author and trainer to identify which information each should update. The help author updated the steps and feedback in the procedures and the trainers updated the scenarios, sample data, and graphics.

Some of the layout problems were identified by importing the training manual into RoboHelp. Once the training manual was in RoboHelp, we were able to see very clearly what parts of the page layout would not work in the help.

### **Styles**

Frequently, user documentation has a more extensive and controlled use of formatting through the application of styles than the training materials. Documentation groups commonly have style guides and editors to ensure consistency between documents. Although training departments sometimes follow strict style guidelines and even have editors to enforce consistency, trainers are more likely to produce more informal documents that are in a constant state of change, either through revisions or supplements created between classes.

Trainers can leverage the help author's expertise in managing styles and consistency in documents by adopting the standards already in place for user documentation. Of course, there may have to be new styles and guidelines to accommodate the unique training components, so the documentation team must

also be flexible. In other words, the styles may have to change slightly for both manuals to allow the single-sourcing to work.

In our case, both the help and the training manual had well-established style sheets and formatting guidelines. Both groups also had editors. Because RoboHelp was the single-sourcing tool being used, we had to favor the styles created for the help over those created for the printed manual. RoboHelp does allow style mapping from CSS to DOT files, so some significant variations were easy to maintain such as the use of a serif font in the printed manual and a sans serif font in the help. Other standards were changed; for instance, the help started concept topics with “About” and tasks with gerunds and the training started concepts with gerunds and nouns and tasks with “How to.” The merged style started concept topics with a noun or adjective (with the goal of putting the important keywords early in the phrase for scanning purposes) and started the procedure topics with gerunds.

### **Specifics About RoboHelp**

Each single-sourcing tool will have an impact on how you merge the online help and training manual. When using RoboHelp, the use of styles and single-source layouts becomes critical to merging the help with the training manual. This section includes a few tool-specific details about how we used RoboHelp to single-source the help and training manual.

#### **Heading Styles**

The heading styles in our help systems did not change from topic to topic; however, heading styles in the printed training manual are used to create a hierarchical table of contents. In our merged document, we made Heading 2 and Heading 3 styles look the same in the help but different in the printed training manual. This allowed us to create a hierarchy in the training manual that is not applicable to the appearance of the help topics. We used the Heading 1 style only for topics assigned to books in the table

of contents, which made each module start on a new page in the printed training manual. We created a new style for subheadings in the training manual below Heading 3 (rather than use Heading 4) to avoid having these headings appear in the table of contents when it was automatically generated.

The big difference between the help and training manual is that the help only displayed one topic at a time whereas the training manual would run several “help topics” together to create a chapter in the printed manual. Not every “help topic” needed to start a new page in the printed manual. For instance, the module objectives, introduction, and concepts could be three or more “help topics” in RoboHelp but would appear as a continuous section in Microsoft Word when the printed manual was created.

#### **Conditional Build Tags**

Conditional build tags allow you to identify a topic or part of a topic (word, phrase, paragraph, graphic) so all tagged data can be eliminated from a generated output.

We created two conditional build tags: print and online. We only tagged the topics and pieces of information (paragraphs, screen shots, notes) that should be hidden. Anything that was not tagged appeared in both the help and the training manual. For instance, the Overview topic included two different overviews. The overview for the help was tagged with the help tag; it included links to other help topics. The overview for the training manual served as an introduction to the course and did not include any links but instead reviewed the course objectives. This single overview topic appeared differently for the help and the training manual.

Although we did not customize the help in this situation for different user groups, we could have created additional build tags to create a special view of the help for each user group. For instance, we could have had a group for users who set up the customer (implementation

consultants), users who configure the system (developers), and users who process the companies' payrolls on a weekly basis (service representatives). Creating build tags for each of these user groups would have allowed us to single-source three customized views of the help so each user would only see content in the help related to their specific user role.

### **Single-source Layouts**

Single-source layouts are saved definitions of how you want to generate your help system and printed training manual. You can use the layouts to change the order of the table of contents, insert additional documents into the printed training manual, and automatically map styles between the cascading style sheets used in the help to a Word template (DOT file).

We created two single-source layouts: one for the online help and one for the printed training document. For the help, we created a build expression that excluded the print information (i.e., the unique training features). For the training manual, we created a build expression that excluded the online information (i.e., lists of links such as for related topics, any references to clicking, and substitutes for any image maps that contained layered information behind them).

We used the section layout feature to insert additional external documents for the appendices: the extended practice, answers to review questions, and the course assessment. In some cases, you might also include quick reference information at the end of the training materials.

The first time we generated the printed training manual, we created a Word template (DOT file) automatically from the CSS file. We modified the automatically created Word template until the printed training manual looked acceptable. From that point on, we used the modified Word template when we generated the printed training manual from RoboHelp. Style mapping allowed the two

documents to look different without requiring any post editing to the single-sourced printed training manual.

### **Source Control**

The only trouble free way that multiple authors can collaborate on a RoboHelp project is by integrating it with a source control system. The source control system, supported by RoboHelp X5+, allows help authors and trainers to work remotely without constant communication because the source control system protects them from updating the same file at the same time.

### **Limitations of RoboHelp**

Single-sourcing with a tool like RoboHelp allows you to achieve some efficiencies in creating and reusing information or what Rockley calls Level 2 single-sourcing. [6] However, because it stores information at the topic-level rather than storing smaller chunks of information in a database, RoboHelp is not capable of producing full-blown Level 3 customizable content for documents with no overlap in organization, content, layout, or style.

### **Conclusion**

Online help and training manuals can be single-sourced using a tool as simple as RoboHelp. The key to success is not what tool you choose to use, but how well you analyze and restructure your information to allow the online help and training manual to co-exist in the source system so there is no post-production work required after generating each of the single-sourced documents.

The politics that separate documentation and training in most organizations represents the main obstacle to single-sourcing. Although they share a responsibility to improve and support performance, writers and trainers often work at odds, duplicating information, interviewing subject-matter experts (SMEs) for the same information twice, and providing two different methods for answering questions

about the product (i.e., the training manual and the help). Without high-level support for single-sourcing at a level that can require accountability from both the documentation and training groups, single-sourcing for help and training manuals cannot succeed.

The project described in this paper was a proof of concept that was never fully implemented due to the physical separation of the documentation and training departments, two intractable standards and development processes, and the lack of a mandate from a high enough authority to champion the organizational change.

### References

- [1] Karen A. Schriver, *Dynamics in Document Design*. New York: John Wiley and Sons, 1997.
- [2] Ruth Clark, *Building Expertise: Cognitive Methods for Training and Performance Improvement (Second Edition)*. Washington, DC: International Society for Performance Improvement, 2003.
- [3] William Horton, *Designing and Writing Online Documentation: Hypermedia for Self-Supporting Products (Second Edition)*. New York: John Wiley & Sons, 1994.
- [4] Robert M. Gagne, Walter W. Wager, Katharine C. Golas, and John M. Keller, *Principles of Instructional Design (Fifth Edition)*. Belmont, CA: Wordsworth/Thomson Learning, 2005.
- [5] David E. Kieras and Susan Bovair, "The Role of a Mental Model in Learning to Operate a Device," *Cognitive Science*, vol. 8, pp. 255-273, 1984.
- [6] Ann Rockley, "Single Sourcing and Information Design," in *Content and Complexity: Information Design in Technical Communication*. Michael J. Albers and Beth Mazur, Eds. Mahwah, NJ: Lawrence Erlbaum Associates, 2003, pp. 307-335.

### About the Author

Rob Houser is a founding partner of User First Services ([www.userfirst.net](http://www.userfirst.net)), a consulting company based in Atlanta, Georgia, that specializes in designing and creating user assistance. Through User First Services, Rob produces online help and Web-based training as well as traditional documentation and training materials. Rob also works with companies to improve the usability and integration of the product and user assistance. Rob earned a Master of Technical and Scientific Communication from Miami University of Ohio. He is an associate fellow of the Society for Technical Communication and a certified Macromedia Master RoboHelp Instructor and Captivate Instructor.