

Learning from EPSS

Roberta A. Rupel

Users have goals when they use software applications. Their goal is NOT to “use” the application. Their goal is to complete an activity or task using the application. Performance support is defined as providing users what they need to be successful in completing their activity or task when they need it – at the point of need. Technical communicators can benefit from incorporating performance support elements into their work, even if they are not creating a performance support system.

SUPPORTING USERS?

Users have goals when they use software applications. Their goal is NOT to “use” the application. Their goal is to complete an activity or task using the application. Typically, application support materials developed focus on using the system. These items contain information about every command, menu, and field in the system and explain the “what” of each item.

However, users rarely try to learn the application. Rather, they have to complete tasks and they have been given the application as the tool for getting the task completed. They do not want to become experts using the application; they want to complete their tasks.

Recent studies in our field (4; 5) show that users do not read manuals or use online help systems. The overwhelming reason for this seems to be that users do not find this information useful. They must search through pages or help topics to find information related to what they are trying to do, then piece it together to figure out how to use the system to complete their task.

The field of performance-centered design (PCD) offers an alternative approach to what we do. Performance-centered design looks at improving the user’s performance as they use the system by centering on the task and not the application. The goal is to deliver the knowledge or resources to the user in such a way as to improve their performance (7). In the software industry, this often takes the form of an electronic performance support system (EPSS) (4).

EPSS IS....

What, exactly, is EPSS? According to Gery (3), an electronic performance support system (EPSS) is software or a software component that improves user performance by

- Simplifying the steps required to perform a task
- Providing just in-time information
- Helping users decide what actions to take

The goal of an EPSS system is to improve user performance on the system. To do this, it helps to understand the Performance Support Continuum (or Spectrum). According to Raybould,

Support needs to be provided in a continuum of interventions or “performance support structures.” The interventions or structures range from embedded support in the tool or software interface (intrinsic support), to support that is linked to the tool (extrinsic support) such as wizards, cue cards, coaches, advisors, and help systems, to support mechanisms that are entirely separate from the tool (external support) such as tutorials, web-based and computer-based training, peer support, and telephone hotlines. As the support structure moves farther away from the tool and requires more time off-the-job it becomes less powerful and more expensive to use. As the support moves closer to the tool and to the actual work itself, it becomes more powerful and less expensive in terms of lost time on-the-job. (3)

This concept is illustrated in Figure 1.

Figure 1: The Performance Support Spectrum

External Support	Extrinsic (linked) Support	Intrinsic (embedded) Support
Instructor-led Classes Computer-based Training (CBT) Web-based Training (WBT) Video-based Training Books Telephone support	Guided Tours Wizards Coaches Online Help Hypertext links to definitions, etc.	On-screen instructions Error Messages Tool tips Status lines or messages
Low User Productivity	← Productivity →	High User Productivity

EPSS is not online help

EPSS is not online help (although, as shown in Figure 1, online help is one element of a performance support system). Even though both are associated with the tool or application, there are fundamental differences in intent and content. Table 1, from Gery (3), summarizes these differences.

Table 1: Differences between EPSS and online help

EPSS	Online Help
Support a broad range of tasks, whether or not software is involved.	Typically support only related tasks and are usually confined to software rather than job task support.
Provide information, task structuring, interactive, conditionally branched advice, examples, and interactive training.	Provide passive information only.
Internally cross-referenced information or knowledge, which is also linked to other structures.	May or may not be internally cross-referenced. Typically content-sensitive to software applications and not linked to other resources.
Can support complex, interrelated tasks with conditional branching.	Usually provide limited descriptions or procedures and, sometimes, examples. Rarely deal in combined procedures or complex tasks.
Provide multiple means of access and alternate views of the content.	Typically accessed via structured menus (topic listings, alphabetical listings, commands, and so forth).
May accept user input or data.	Do not accept user input or data except as menu choices.
Can contain customized views of the information or support.	Could contain customized views of the information, but rarely do.

EPSS is not training

EPSS is not training (although Figure 1 shows that training can be considered one element of a performance support system). According to Brown (1), training can be defined as a preplanned, goal-oriented approach to teaching people. Its goal is to help people acquire skills and knowledge PRIOR to job performance. The goal of an EPSS system is to improve the user's performance on a system as they use the system. According to Gery, "...the primary differences lie in the organization of the information and support for the learner, the degree to which learners can structure their own learning experience, and the availability of the support in an on-the-job context" (3).

EPSS is not always the right approach

Of course, an EPSS system is not always the right approach to take. According to Brown (1), an EPSS system makes sense when the following conditions are present:

- An information or technology explosion exists (users need to remain current)
- Experts are not available on-site.
- Expectations for performers are high
- User learning styles are suitable for EPSS (especially those who prefer a self-directed learning approach)
- Sufficient lead time exists to develop the system.

Most companies do not implement a full-scale performance support system for their tool or application. Many organizations are not even aware that they have this option. Others cannot justify the expense behind developing such a system.

Still, there are many examples of EPSS systems available today. Products developed by Intuit (Quicken, TurboTax) are often cited as examples of what can be done to support user performance. Marion (6) compiled a list of award winning systems in this case study. More information can also be found on the EPSSInfo website (<http://www.epssinfo.com>).

USING EPSS CONCEPTS

Even if you will never develop an EPSS you can (and should) incorporate concepts from EPSS into your work. This section looks at two concepts that are easily adapted to traditional technical writing.

Understanding What Users Need

Users have many questions and concerns as they work through the tasks of their day. Using a tool or application further amplifies this. To understand what users need, you need to understand their concerns. Gery (3) identified these concerns, which include such things as

- Why do this?
- What is it?
- What's it related to?
- How do I do it?
- How or why did this happen?
- Show me an example

According to Gery (3), an EPSS anticipates these questions and is able to respond at the point of need with the information a user needs. The responses for the above questions would include:

Why do this?	Explanation Example and consequences
What is it?	Definitions Illustrations Descriptions
What's it related to? How do I do it?	Available links Procedure Interactive advisor Structured paths (flowcharts, step charts, job aids) Demonstration
How or why did this happen?	Explanation Example or demonstration
Show me an example.	Examples

Many of these items are included in online help systems. However, the information is often buried in the system, making it difficult for users to find the information. What would happen if you designed a help system that made this information available as soon as the user indicated a need for it?

Knowledge Representation

The other aspect to consider is how this knowledge is best presented to users. In the EPSS world, knowledge is typically broken down into information types based on the Information Mapping® method, which are summarized in Table 2 (3).

Table 2. Information Types

Concept	A group of items which share a unique combination of critical attributes and can be referred to by the same generic name.
Fact	A statement that can be asserted without supporting evidence.
Principle	A statement which tells the reader what should or should not be done or what seems to be true in light of the evidence.
Structure	A physical object which can be divided into parts and has boundaries.
Procedure	A set of steps performed by one person to obtain a specified outcome.
Classification	A sorting of items into categories based on a sorting attribute.
Process	A series of events or phases which take place over time and have an identifiable purpose or result.

Knowledge representation describes how each information type is presented to the user at the point of need. Table 3 summarizes this for an EPSS system (1).

Table 3. Representing Knowledge in an EPSS.

Knowledge	Example of EPSS Representation
Concepts	Pop-up window or hypertext link to concept
Facts	Pop-up window containing the fact
Principles	Pop-up window of principle with application to job task
Structures	Graphic diagram with hypertext links to additional information
Procedures	Interactive procedure in text, video, or graphic format
Classification	Pop-up window of comparison or advisor for recommended path
Processes	Interactive or static representation of process in text, video, or graphic format

Think about your online help system. How do you organize each type of information? In many help systems, there is no distinction between information types. Users must read through long topics (or many unorganized shorter topics) to find the type of information they need.

Is there a better way you could present the types of information so users can easily find what they need?

USING THESE CONCEPTS EVEN WHEN YOU DO NOT DO EPSS

Even if you are not developing an EPSS, you can still apply EPSS concepts to what you do. You will need to change the focus of your documentation from the tool or application to the tasks the user needs to complete (with the tool or application). You will also need to think about the types of information you provide and how you can best deliver the information based on what your company supports.

The following five-step process should provide a framework for incorporating these concepts into your development.

Step 1: Determine what you can and cannot do.

This falls under the heading of “know your deliverables.” If your company only understands online help, then that is what you are able to provide. Fine. Accept this and use the concepts from EPSS to help improve what you provide.

Step 2: Understand what your users are trying to do (the goal).

By this, I mean understand the business your users are in and the task they need to complete. Who are they? Where did they go to school? What classes did they take? What is expected of them at their jobs? What do they do in a typical day? What can you assume they know about the business? About their job? About computers or technology?

In addition, spend time learning about their businesses. What drives their bottom line? How does your tool or application fit into their overall business model? What changes are happening in their business that would impact how they do business?

Answering these questions will help you develop a picture of what your users face each day. It will also help you understand how your company's tool or application fits into their business model. This will help you determine what information your users really need to have (and when they need to have it).

Step 3: Understand how the users do their work (the workflow).

In addition to understanding your users and their business, you must understand the tasks your users are trying to complete with the tool or application you are documenting.

You must also know how they go about completing this task. Do they use the application exclusively? Do they need to gather information from other sources first? How often do they need to complete the task?

If you can, visit your users at their office or place of business. Watch them do their work. Ask them about how they do the task, what information they need, what questions they have at each step in the process, etc. This will help you get a realistic view of how your users use the application.

If you cannot get to your users, talk with people who do (for example, your customer support area or your sales representatives). If possible, listen in on the phone calls that come in to customer support. You might be surprised at the questions that are being asked.

Step 4: Determine the knowledge needed at each step in the workflow for them to be successful.

Based on your work in step 3, create a table with two columns. In the first column, list the steps in each task the user will complete. Then, in the second column, for each step, list the knowledge or resources the user

will need to be successful at completing the step. This may or may not include information specific to the tool or application.

Tip: Review this information with your project team. They will benefit from this type of analysis, especially if they have never considered this perspective in past tool or application development projects.

Step 5: Determine the best method you have available to deliver the knowledge.

Extend your table from step 4 by adding columns for each method you have available. Then, for each piece of knowledge, identify which method or methods you will use to deliver this information.

When you are finished, you will have a written plan for supporting your users through the tasks they will complete with your company's tool or application. This document will help you determine what you will include in your online help system (or any other deliverable you create). It will also help you structure the information so that users are more likely to find what they need.

This process may also start you (and your company) thinking about other ways you can support your user. For example, if you were to move some of the information from online help directly into the interface, how would this improve user performance? How difficult would this be from a development perspective?

Exploring these options may help you provide additional methods for delivering information, improve user performance, and have a direct impact on your company's bottom line (as sales increase and support costs decrease).

REFERENCES

- (1) Brown, Lesley A. *Designing and Developing Electronic Performance Support Systems*. Digital Press, 1996.
- (2) Carliner, Saul. *Read Me First: An Introduction to This Special Issue*. . *Technical Communication*. Volume 49, Number 4 (November 2002). 399 - 404.
- (3) Gery, Gloria J. *Electronic Performance Support Systems: How and why to remake the workplace through the strategic application of technology*. Gery Performance Press, 1991.
- (4) Grayling, Trevor. "Fear and Loathing of the Help Menu: A Usability Test of Online Help." *Technical Communication* Q2 (1998) (pages 168-179).

- (5) Grayling, Trevor. "If We Build It, Will They Come? A Usability Test of Two Browser-based Embedded Help Systems." Technical Communication. Volume 49, Number 2 (May 2002). Pages 193-209.
- (6) Marion, Craig. Attributes of Performance-centered systems: Five Years of EPSS/PCD Competition Award Winners. Technical Communication. Volume 49, Number 4 (November 2002). 428 - 443.
- (7) Raybould, Barry. The Performance Support Engineering Reference Handbook. Ariel PSE Technology. 2001. (www.arielpse.com)

Roberta A. Rupel
Information Development Team Leader
Edward Jones
201 Progress Parkway
Maryland Heights, MO USA 63142
robbie.rupel@edwardjones.com

Roberta has been a technical writer for over 17 years. She holds degrees in Radio/Television Production and Electrical Engineering Technology from Purdue University. She is a Senior Member of STC, the President of the St. Louis STC chapter, and STC Quality SIG Manager.