What is an EPSS?

> *EPSS is defined as "an integrated electronic environment that is available to and easily accessible by each employee and is structured to provide immediate, individualized on-line access to the full range of information, software, guidance, advice and assistance, data, images, tools, and assessment and monitoring systems to permit job performance with minimal support and intervention by others."*

Source: Gloria Gery, <u>Electronic Performance Support Systems,</u> published in 1991.

Additional Resources:

- http://www.epsscentral.info (an EPSS about EPSS)
- EPSS Revisited: A Lifecycle for Developing Performance-Centered Systems (ISPI 2003)
- Michael Allen's Guide to e-Learning (Wiley 2003)
  - Authorware
  - Macromedia
  - Allen Interactive

Application

EPSS may provide an economical and timely alternative for performance improvement and support when training is not warranted, or practical, such as with new hires, a temporary job rotation or completing a task that is performed infrequently.

Under these circumstances, the <u>benefits</u> of an EPSS may include:

- Ability for employees to rotate into different positions on demand as workloads change from season to season, day to day, or even hour to hour
- Enabling new hires can become instantly productive
- Reduction or elimination of errors caused by memory lapses, poor habits, and distractions
- Infrequently performed tasks can be performed with the same level of thoroughness and competency as frequent tasks

Application (cont.)

Choose EPSS When…	Choose Interactive Instructional Intervention (e.g., eLearning, Instructor led, Blended solution) When…
The task or job changes often.	The tasks are relatively stable.
Staff turnover is high	Workers hold same responsibilities for a long time
Performers do not need to know why each task step is important and whether it is appropriate in a specific circumstance	Performers need to evaluate the appropriateness of each step and vigilantly monitor whether the process as a whole continues to be appropriate
Tasks are systematic but complex and difficult to learn or remember	Tasks may require unique, resourceful, and imaginative approaches
Tasks are performed infrequently	Tasks are performed frequently
Tasks allow time for performance support	Tasks are time critical and prohibit consulting a performance guide
Supervision of employees on the job is limited or unavailable	Supervision is expensive or impractical
Mistakes in performance are costly	Mistakes are easily rectified
Learners are motivated to seek a solution	Learners don't appreciate the value of good performance

Support Levels (see PST)

The three support levels—Intrinsic, Extrinsic, External—are taken from Gery in the context of support for software applications. The concepts can be applied to all EPSS whether or not the task is directly connected to a computer software application.

Intrinsic Support

Performance support that is integrated into the interface, content, and behavior of the application logic. User assistance for completing the task is so tightly integrated with the interface that it appears to be part of the system.

Extrinsic Support

Performance support that is integrated with the application, but is not the primary workspace. User assistance that is available within the system, but requires the user to break the task flow to obtain it. Summoning online help is a common example.

External Support

Support for performance and learning that is external to and not integrated with the computer-mediated workspace. User assistance that requires the user to break the work context entirely, such as looking up something in a book, attending a training session, or making a call to a help desk.

Attributes for Assessing EPSS (see PST)

Gery describes nineteen attributes which can be used for assessment in evaluation or design of an EPSS. The Website referenced above (http:/www.epsscentral.info) provides a job aid for scoring each attribute, to construct a mathematical average and obtain a quantitative assessment of how performance centered the software is.

A summary of the attributes is as follows.
- The first four attributes reflect some task sequencing.
- Items 5-8 describe things that appear on the display (or alternate display).
- Items 9-12 describe what is presented as a function of user or system action.
- Attributes 13-18 describe system behavior, options and underlying functionality, but they also describe what appears in the interface as well.
- Item 19 specifies consistency with conformance to standards in designing graphical environments

Further Distinction between Learning and Performance Support

EPSS is about improving performance. The point-of-performance interface, which delivers the precise amount and type of support at precisely the right time, is the performance support (PS) system.

Conversely, any activity that begins and ends with putting things into people's heads rather than with directly improving their performance is not PS. Focusing on learning or knowledge transfer rather than performance results in people who know what to do but never do it. This may also lead to training as a solution to problems for which it is inappropriate.

The goal of training is learning, with improved business performance an obscure assumption. With PS, performance is the goal. In a well-designed PS system, learning is likely, desirable, even inevitable, but it's not the point! Performance is the point.

Link between EPSS and Distributed Cognition Theory

Cognitive theory is based on knowledge transfer occurring inside a person's head between working memory and long term memory. Corresponding learning theory suggests that we learn new material best, by connecting with something we already know. Furthermore, working memory has limitations with regard to the number of things we can keep track of at any given moment, presumably 7 plus or minus two. Working memory available in our heads is further taxed by extraneous cognitive load caused by noise or distraction in the design of the learning materials.

The basic idea of distributed cognition is that cognition does not occur as an isolated event that takes place inside one's head. Rather, cognition is a distributed phenomenon that extends beyond the boundaries of a person to include environment, artifacts, social interactions, and culture. This theory is consistent with the constructivist view that human

cognitions are situated and distributed rather than decontextualized tools and products of the mind.

From the perspective of distributed cognition, four principles emerge which support EPSS.

1. Cognition is mediated by tools
2. The critical role of mediation in cognition means that cognition is rooted in the artificial
3. Cognition is a social affair that involves delicate variations and shades of communication learning, and interpersonal interactions
4. Functional systems (i.e., systems made up of the interaction between a person and a tool) profoundly extend what a person can do with a tool, versus without