A Three-Tier Technology Training Strategy in a Dynamic Business Environment

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As end-user training becomes increasingly important in today's technology-intensive business environment, progressive companies remain alert to find ways to provide their end users with timely training and resources. This paper describes an innovative training strategy adopted by one midsize organization to provide its end users with adequate, flexible, and responsive training. The paper then compares the three-tier strategy with other models described in technology training literature. Managers who supervise technology end users in organizations comparable to the one in the study may find the three-tier strategy workable and may want to use it in their own training programs to facilitate training and improve end-user skills. Researchers and scholars may find that the idea of three-tier training generates new opportunities for research.

Existing studies on end-user technology training emphasize the training process: Research efforts have focused on needs assessment (Nelson et al., 1995), trainee learning styles (Bostrom et al., 1990), and delivery methods (Sein and Bostrom 1989; Compeau and Higgins, 1995). Although such studies are important in understanding the operational issues of the training process, they do not address higher level strategic concerns. Without a training strategy, it will prove difficult for trainers and organizations to devise an effective program to support end users and meet business objectives, because employers and trainers will only be able to design training programs based on their personal experiences (Sein et al., 1999).

In a dynamic business environment, business organizations need to address issues such as: How much training is enough? Should organizations blanket-train all end users on every application, or should they be selective? and How often should an organization train its end users? Because employees' productive work time in a highly competitive market is too precious to be lavished on unjustified training, organizations also need to determine the cost-benefit ratio of training time to productive work time. Thus, employers face related issues such as: Can organizations justify the hiring of employees without adequate technology skills and then provide them training? and How will they train employees with little or no technical know-how? To answer these questions, employers desperately need a training strategy.

The purpose of this paper is to show how one company developed a training strategy that would answer these questions. The paper first describes the challenges modern businesses face in supplying technology users with adequate training. It then describes some unique difficulties that one midsize financial organization faced and the three-tier approach they adopted to solve their training problems. The following section discusses the advantages of the study strategy and compares it to other models described in literature. Finally, it proposes further opportunities for research using the three-tier training model.

DEFINITION AND SCOPE OF TECHNOLOGY TRAINING

Traditionally, technology training has been an important part of end-user support. Technology training is defined as the process of transferring required knowledge and operational skills to users of information technology. The fundamental purpose of technology training is to produce users with practical skills that enable them to use technology applications. A more ambitious goal of technology training is to create motivated users who can apply learned skills and knowledge to their jobs, and who can continue to learn as skill and technology requirements change (Sein et al., 1999).

The value of technology training is clear: It ensures end
users’ success in operating computers, as emphasized by previous research (Bostrom et al. 1990; Davis and Bostrom 1993). End-user technology training is a necessary component in the successful implementation of new information systems and operational procedures; it plays a critical part in quality assurance and continuous total quality improvement (White and Christy 1987); and it should be viewed as a form of investment in human capital rather than as an expense (Becker 1992).

TECHNOLOGY TRAINING NEEDS
Recent decades have seen the demand for technology training increase steadily until it has come to be regarded as a necessary component of doing business (Compeau et al. 1995). Today, even routine business activities—hiring new employees, implementing new systems, changing computing platforms—require training to facilitate the transition. Because what each organization regards as “current technology” changes frequently, technology training has become an ongoing activity. Organizations that are successful in highly competitive environments understand that technology training is vital, and so adopt continuous training programs to create a culture of learning (Pitman 1994).

CHALLENGES FACING TECHNOLOGY TRAINING
Not only has technology training become a constant feature of today’s typical business experience, its complexity has deepened in proportion to the need for it. Many business organizations face a daunting task to provide adequate technology training to end-user populations whose membership is constantly becoming more demographically diverse and who are already under serious resource and time constraints.

Finding a supply of training materials to cover a proliferating list of subjects is another challenge. Some years ago, when it first became popular for consumers to buy personal computers, the free software that came bundled with those computers often could have been said to suffice as “training material” for those novice technology users (Fitzgerald and Caster-Steel 1995). But current software applications are significantly more varied and more complex than their bulky and simplistic ancestors. End users are now far more sophisticated, and commonly participate in activities such as systems development and using client-server applications—things that would previously have been considered “advanced” (Kappelman and Guynes 1995).

The process of selecting just the right training method from the plethora of candidates is frequently bewildering. Many business organizations have decided to rely primarily on computer-based training (CBT) as a way of minimizing overall training costs; but when they attempt to combine traditional instruction methods with CBT, they may need to sift through a confusing array of formats, delivery methods, and interaction modes before making their choice (Huang 1996-97).

The need to ensure that a business’s chosen technology training program will accomplish its business objectives exerts pressure on everyone involved in the training process, because no training objectives are more crucial than meeting business objectives. After all, training is a means to an end. Companies only agree to finance training for their end users when they have some assurance that the users will be able to apply their newly acquired skills to improving productivity and quality. Thus, businesses expect technology training to improve user performance and, ultimately, to help meet organizational goals.

PRIOR RESEARCH ON TECHNOLOGY TRAINING
The body of extant research on technology training contains a large number of both empirical and theoretical studies on end-user training. Drawing from studies on end-user training, this section briefly reviews selected studies of three types—those addressing user issues, those addressing methodological issues, and those addressing training objectives and needs assessment.

Creating an effective training program requires taking these three issues into account and addressing them concurrently and with equal emphasis. The section below, “Case Study—SVE Company,” which follows the discussion of research issues, describes a real-world training program that considers these issues.

Research Addressing User Issues
End-user characteristics have been a popular subject of study. Sein et al. (1999) suggests that the most effective way to classify end users is by their job functions, abilities, learning styles, and motivation. Aside from these categories, trainees have also been grouped according to prior knowledge, demographics, cognitive styles, and learning preferences. Sometimes they have been classified as transactional, casual, or power users. “Transaction” users are defined as those who use tools to carry out a transaction; “casual” users are those who use tools to retrieve information; and “power” users are those who are able to provide an interface between end users and development teams (Sein et al. 1999).

Research Addressing Methodological Issues
Training methods may be classified as conceptual or procedural (Santhanam and Sein 1994, Olman and Manddiwalla 1994); as behavioral modeling (Compeau and Haggins 1995); as exploratory learning; or as collaborative learning. There is also an abundance of studies comparing CBT to instructor-led training (Huang 1996-97).
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