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E-Learning for the Enterprise

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Executive Summary

E-learning enables organizations to respond quickly to changing business situations and shorter market cycles by using information technology to provide employees with learning on demand. It is an emerging area of strategic importance to business, and spending on this component of the information infrastructure is expected to reach US \$23 billion by 2004. Smart companies are investing in e-learning programs to maximize their investments in enterprise systems and improve the productivity of their employees.

This paper presents background information on e-learning and discusses technology-delivered learning as a cost-effective and critical support for many business activities. It highlights a mini-case study of e-learning experiences at PricewaterhouseCoopers (PwC) and notes some other companies that have successfully embraced e-learning. It also discusses the business benefits of e-learning, the role of e-learning in enterprise product launches, and some adult learning considerations. Factiva Learning Programs and Factiva's approach to learning for both employees and clients are described. A case study describes how Factiva trained a global sales and marketing team on its new flagship product in five weeks with a savings of 558% over the cost of traditional classroom instruction.

Meeting the Need to Know – Quickly

In today's fast-moving business environment, there is only a short amount of time to capitalize on market demand before competitive products appear on the scene or the next best technology emerges. The speed of business requires employees to absorb new knowledge and new skills so they can respond to the dual challenges of changes in the marketplace and advances in technology. Organizations must help employees learn, quickly and continuously. Many organizations, including Factiva, have found the tool to do this in e-learning.

What is meant by e-learning? E-learning is the use of network technologies to create, foster, deliver and facilitate learning, anytime and anywhere. It includes computer-based learning, Web-based learning, virtual classrooms, and digital collaboration.

E-learning programs put learning tools at individual employee desktops to be used on demand. Learning content can be delivered via a variety of electronic media including:

- Internet
- Intranets/Extranets
- Satellite broadcast
- Audio/Videotape
- Interactive Video
- CD/ROM

E-learning has the potential to revolutionize learning in the workplace – changing learning opportunities from institution-based, generic training programs to self-directed, customized, individual learning options. A key advantage of e-learning is that it is available on an as-needed basis to a geographically dispersed audience.

Content is presented consistently to all learners and can easily be updated and modified.

E-Learning in Business Strategy

The IT analyst firm, IDC, forecasts that worldwide spending on e-learning will reach US \$23 billion by 2004, a striking increase from a market of less than US \$2 billion at year-end 1999. (1) While consolidation in the e-learning industry and a slow economy may not allow this target to be reached within such a short timeframe, there is no doubt of the field's aggressive growth. Enlightened executives are not considering e-learning an isolated activity, but rather, a piece of the overall business strategy.

For example, PricewaterhouseCoopers Consulting successfully implemented a business-to-extended enterprise (B2E) portal. This self-service desktop environment for employees provides critical information, software applications, and infrastructure products to drive efficiency gains, use of best practices, job satisfaction, and team collaboration. Since introducing the portal for employees, PwC Consulting has been able to leverage the expertise gained to develop programs for suppliers and business partners and to create an e-learning advisory practice for clients. (2)

Hewlett-Packard's learning portal, @hp, handles HR, administrative and training functions for more than 90,000 employees around the world. Course offerings range from IT courses to leadership development courses. The greatest business benefits to be documented are a significant reduction in paperwork and faster decision-making by employees. In addition, the portal achieved a return of \$50 million within six months of going live. (3)

E-learning is frequently mentioned in conjunction with knowledge management. Some of the distinctions between e-learning and knowledge management are blurring, primarily because both take advantage of technology to prepare a smarter workforce, to share and reuse individual and institutional knowledge, and to respond quickly to business challenges. An active corporate learning program can be a dynamic part of any knowledge management program to the extent that it promotes knowledge sharing and allows new findings and best practices to be quickly communicated and reviewed.

E-learning, however, should not be considered an incidental by-product of knowledge management programs. E-learning programs must be based on solid instructional design and development principles in order to produce the desired results.

E-Learning in Practice

E-learning has the potential to solve at least two critical business needs:

- Faster, more economical, distributed learning, and
- More efficient, timely, and strategic sharing of knowledge.

As e-learning programs gain visibility in the overall corporate strategy, the long-term effectiveness of some classroom-delivered instruction is being questioned. The Research Institute of America found that 33 minutes after a lecture has been completed, students usually retain only 58% of the material covered in the class. By the second day, 33% is retained, and three weeks after the course, only 15% of knowledge is retained. (4) While these findings do not mean that retention rates for all in-person instruction

are low, they do encourage experimentation with other forms of training delivery.

Some e-learning applications enable employees to scan through a library of course offerings or knowledge-sharing resources at any time and select modules that meet an immediate learning need. Employees can then work through all or part of the course material to answer particular questions or learn specific techniques. They learn at their own pace instead of being constrained by the pace of the group in instructor-led classroom training.

A common objection to e-learning or virtual learning is the lack of social interaction and the lack of spontaneous knowledge exchange that occurs in a classroom of peers and colleagues. These considerations cannot be denied. For this reason, many organizations opt for a blended approach to learning - blending traditional classroom learning with e-learning. People enrolled in courses for management and leadership training, or courses designed to improve interpersonal skills, still benefit immensely from personal interaction, role-playing, and immediate feedback. This type of training may continue to be offered in a more traditional classroom setting with colleagues and an instructor. But Web conferencing and video conferencing are helping to further blend in-person and virtual learning experiences.

E-learning or online learning can cost-effectively replace some instruction formerly given in a classroom setting and addresses the need for learning anywhere, at any time. The role of e-learning in shortening the amount of time it takes to get workers up to speed on new products and new processes is one of the critical success factors for e-learning programs.

Adult Learning

Since technology now affords the opportunity to deliver learning content tailored to individual requirements and learning styles, an understanding of how adults learn is arguably a requisite for successfully incorporating e-learning into performance development programs. Although it is not possible to deliver learning options exclusively to an individual style, customizing content modules so they are available for the learner's predominant or preferred learning mode causes greater natural interest and makes it more likely that information being presented will be readily absorbed.

Adult learners process new information through filters of experience and previous learning and may need more time to absorb new information. They understand better and remember longer when content and procedures are logically structured and sequenced. In addition, new information is more readily assimilated when it is delivered in small chunks on the job. Immediate access to learning tools that have been integrated into work processes can be extremely rewarding for the employee who needs to accomplish a task. Rockwell Collins, the avionics manufacturer, reports videotaping experts performing specific tasks. The video is augmented with text-block reminders of what is important and short true-or-false quizzes and put on a CD-ROM. Some lessons are as short as three minutes - just the right amount of information, just as it is needed. (5)

Many adults have not spent much time contemplating how they learn and thus cannot describe their preferred learning style. Employees should be encouraged to think about whether they learn most successfully on their own or in groups and whether via audio, visual, or tactical, hands-on instruction. Understanding one's own learning style can alleviate anxiety that may accompany opportunities for learning in the workplace - particularly as more and more e-learning options are introduced.

Adult learners have to show a great deal of initiative to learn - taking time from already-full work schedules to give attention to absorbing new information. Managers who understand the learning preferences of their teams (at the level of individual employees) will provide more effective guidance in selecting courses and formats to produce specific outcomes. Gene Broderson, Director of Education at the Corporation for Public Broadcasting, recommends that managers hold debriefing sessions with employees after they complete learning exercises to [evaluate the training](#) and then regularly monitor progress after the training to check that relevant new skills and competencies are being incorporated into their work.

E-Learning for Employees and Clients at PwC

The global accounting firm of PricewaterhouseCoopers (PwC) is actively embracing e-learning to quickly and cost-effectively deliver business skills training and technical knowledge. Learning offerings for employees range from commercial catalogs listing available courseware to internal, proprietary CD-ROM-based training, downloadable training programs, programs launched via the intranet, and live and archived Webcasts. Since e-learning is an emerging area, PwC recognizes the need for **lots of experimentation** with new technologies and new ways of working.

PwC's internal and external, client-facing developments in e-learning support each other. The firm initially created e-learning programs to meet specific internal learning and development needs for its employees around the globe and soon found it could repurpose a fair amount of internal learning content for commercial use. As a specific example, PwC clients wanted to be able to use PwC's award-winning interactive CD-ROM series to immerse accounting professionals in real-life issues and decisions surrounding the use of derivatives. On another front, PwC client training groups gained experience with integration of Learning Management Systems (LMS) and were able to use that knowledge and experience to help the firm implement its own LMS.

Fran Engoron, Innovation Leader, Learning & Education at PwC, **notes that the firm is now strategically designing and building learning programs for both internal and external audiences.** While this is a fortuitous development when one initiative happens to be applicable

The Business Case for E-Learning

For a knowledge-based company, investment in learning programs is analogous to a manufacturing company making investments in new equipment or processes to achieve product performance improvements. It is required for continued competitive advantage.

Traditional classroom training is labor-intensive and expensive considering:

- costs for travel and facilities,
- costs for updating, printing and shipping of course manuals and documentation, and
- the opportunity cost of employees' time away from their work.

Rather than spending several days at an offsite seminar, employees can spend a fraction of that time working through an e-learning application with minimal interruption of their other job activities. Yet, while investments in e-learning may seem like the obvious thing to do, it is critical to prepare a business case that clearly defines business objectives and learning targets before investing in e-learning.

One way that Dow Chemical measures return on its investment in Learn@dow.now, a Web-based learning platform, is a decrease in the number of safety incidents even as the number of employees in the company increases. In addition, Dow estimates the total cost benefits of Learn@dow.now to be \$30 million in the first full year of operation. This included \$844,279 saved on manual record-keeping, \$3.1 million on training delivery costs, \$5.2 million in reduced class materials and \$20.8 million on salaries (with Web-based training requiring 40-60% less time than its classroom equivalent). (6)

BellSouth implemented a customized simulation program designed to improve customer service. As a result, the company reduced average training time by 13% and reduced errors made by call center representatives enough to cut total call volume by 3%. Bell South anticipates this program will save as much as \$52 million in its first five years. (7) In this instance, e-learning produced demonstrable savings in a

to another part of the business, she states that leverage is lost if it happens on an ad hoc versus a strategically planned basis. Technology has evolved so that it is easier to repurpose learning content and PwC's Education & Learning team now automatically thinks about how the content will be repurposed while in the design phase.

PwC believes that knowledge management (KM) and e-learning initiatives are closer and closer to intersection. While KM and e-learning are on separate tracks in many companies, PwC's Rayellen Smith, Team Leader, Learning & Education, suggests **that the more closely KM and e-learning strategies are aligned, the more impact both will have.** If the two strategies are not integrated now, companies can anticipate long-term challenges in merging content and technology used for the separate channels. Users need to easily pick the right tool for the task for which they need assistance -- whether the tool is initially conceived as a KM component or an e-learning component.

While success can be measured in various ways, PwC finds that **the most successful learning programs are those that are tied directly to one's work.** If the learning tool is well-designed and the content is critical to helping someone get up to speed for an assignment or to do a specific task, the learning exercise is usually considered successful regardless of the format. Ms. Engoron and Ms. Smith cite the example of a rather basic e-learning program with minimal interactive components that was very well received because it was the easiest way for some of their consultants to obtain the certified training they needed to implement a software product. E-learning is by no means a complete

soft-skills development area that is typically more difficult to quantify.

Cisco Systems moved its technical training for field sales and support personnel online in 1999. It was able to deliver training to 40,000 employees in 60 countries and yet save the company \$2 million on new hire training - enough to pay for its total investment in e-learning technology and content development in one year. (7)

All of the savings and business benefits that result from delivering learning quickly and accurately via e-learning platforms must be balanced against the cost of developing and implementing e-learning programs.

Depending on the scale of the e-learning implementation, costs can include:

- the courseware itself,
- authoring software (if the courseware development is done in-house),
- learning management systems (for tracking enrollment, participation and completion rates),
- purchase/licensing of Web-based software and
- IT system enhancements or upgrades. (8)

Metrics chosen to present the business case and to quantify results must be clearly linked to the specific organization's business and strategic objectives in order to provide meaningful information to senior managers. Productivity improvements, increased efficiency, lower ramp-up times, and reduced turnover are high-impact measures to consider. For example, Rachel Kornberg, Solutions Champion of Schlumberger Learning Solutions, has quantified a 95% reduction in time to resolve technical queries, 75% reduction in time to update engineering modifications and \$150 million in annual savings derived from Schlumberger's InTouch learning portal. (9) Metrics that are not linked to business results, such as total number of persons using e-learning programs or overall participant satisfaction with courses, can result in low credibility in the eyes of senior managers and reductions of training/learning budgets in lean economic times.

solution. Blended solutions, with face-to-face components or collaborative events used before and after e-components, provide a more comprehensive learning experience.

Learning overload is getting to be as great a challenge as information overload. Ms. Engoron and Ms. Smith are enthused about well-timed e-mails as a learning delivery method. They see tremendous potential for sending a basic e-mail message to new employees to supplement orientation programs and to employees beginning a new project. Sending an e-mail message with links to sites and tools that contain information about a new client or industry a few days before a project starts, and then sending follow-up e-mails or e-cards throughout the duration of the project, is a proactive and creative way to guide the user to various resources. The e-mails accelerate learning on client assignments using a simple, familiar means of communication.

PwC has made tremendous strides in incorporating e-learning tools into its learning and development strategies, and the firm continues to learn about how best to leverage this technology. Ms. Engoron believes that since e-learning is an emerging area and technology is developing rapidly, it is very **important for companies to share and collaborate**. There is a need for dialog about what works. If people working in this area are actively culling out and sharing lessons learned and best practices, the development and deployment of effective e-learning will accelerate for everyone.

Logistics for Enterprise Product Launches

Companies often face serious employee learning issues as they launch new or updated programs and products such as new business processes, equipment or software. A common frustration when launching such enterprise programs is that vendor-provided training is frequently found to be inadequate to help the organization quickly realize value from its investment.

With all the e-learning tools now available, organizations expect learning resources such as management tools for registration, tracking and assessment to be built into new products or programs being launched. Organizations want to deploy these new programs and products quickly, and just as quickly, see the intended results.

Challenges related to e-learning modules that are bundled into new products or services tend to center around integration issues (for example, integration of content software or learning management systems), bandwidth and scalability problems, and lack of features/functionality.

Steven King, Senior Human Resources Representative at Rayovac Corp. in Madison, WI, launched an extensive e-learning program within their corporate university, Renewal University. Mr. King has found that the technical challenges cannot be underestimated. Even with extensive research and planning for technical compatibility, unexpected roadblocks have to be solved during the launch process. Ironically, people outside of the corporate offices who should benefit greatly from being able to readily participate in distance learning opportunities experience some of the biggest technical challenges. Mr. King also notes that it is important to have good working relationships with internal IT departments and with vendors to work through the launch process. The rewards come in positive response from users and learning programs that are actually put to use.

Factiva Learning Programs

Factiva, a Dow Jones and Reuters Company, has designed e-learning programs to ease its customers' launch or upgrade to Factiva.com, a business news and information service. The e-learning initiatives are the result of what Factiva experts learned through first-hand experience in deploying their own internal e-learning program.

Factiva created Factiva Learning Programs in 2001. Objectives for the program were two-fold:

- Use e-learning programs to enhance the skills and expertise of Factiva employees.
- Leverage experience gained with employee learning initiatives to incorporate learning tools into Factiva's enterprise product lines.

Factiva Learning Programs proved critical for the launch of Factiva.com, a new service for researching and monitoring business news and information. Only a five-week window was available between the completion of Factiva.com and its commercial launch on 31 July 2001. During those five weeks, Factiva salespeople, customer service representatives and other employees needed to learn the new flagship product.

To meet the tight schedule, and reach employees located in 28 countries around the world, Factiva Learning Programs crafted a solution based on e-learning. The program included:

- **Web conferencing sessions.** At preset times, employees dialed in to voice conference calls and simultaneously logged on to WebEx, an online interactive meeting facility. As a Factiva instructor went through the program feature by feature, participants were able to ask questions both over the phone and electronically.
- **Discussion forums.** In-person forums brought a face-to-face element to the virtual learning effort. Topics with open-ended questions were presented to stimulate discussion at meetings in Factiva offices.
- **Downloadable resources.** Two types of PDF documentation were available for downloading: quick reference cards for basic information and booklets with in-depth information.
- **E-mentoring.** Follow-up phone and e-mail conversations were available for employees who requested further explanation.

Not only did the learning program save time, it saved money. The cost of sending instructors to classrooms all around the world was estimated at more than \$34,000. The cost of the WebEx program was \$6,100 -- a savings of 558%.

Lessons from the Factiva Experience

Factiva successfully introduced about 400 employees to Factiva.com during the summer of 2001. Here are some of the fundamental lessons Factiva learned through the initiative:

- **A blended learning program is critical.** People have different learning styles – visual, auditory, tactile – and effective learning programs should take this into account. Audio proved to be a particularly valuable component of Factiva's learning tools, both for virtual in-person learning delivery and in e-learning modules. The ability to turn audio on or off, depending on network connections, bandwidth and preference, is important.

- **Learning objectives must be repeated frequently.** Factiva found that it is important to state the learning objective at the beginning of a program, reinforce the objective within the program and summarize the objective at the end. This adds to the sense of accomplishment and completion for the learner.
- **Just-in-time access to just enough information.** Online attention spans are short. Learners want quick, appropriate lessons – no more than one to five minutes in length. Learning tools that are more than a couple of clicks from the application will not be used.
- **People were more willing to use virtual learning tools than was originally predicted.** Factiva employees in Asia and some European countries traditionally prefer formal, instructor-led classroom training. With the roll-out of Factiva.com, however, even people in countries with a cultural bias toward in-person training accepted the e-learning alternative. They were pleased to receive the best instruction from the most authoritative presenters at the same time as everyone else in the company.

E-learning for Factiva Clients

Factiva recognizes that today's knowledge workers need to have product training that is convenient, quick and relevant. Immediate access to tips and examples embedded in Factiva.com help clients get the best value from Factiva products. Integrated learning tools improve the quality of information retrieved and reduce the time required to retrieve it.

Factiva's Web-based e-Trainer program demonstrates this convenience. The program is easy to use and provides just-in-time guidance or more

in-depth training, depending on which module a user selects. Self-assessment modules are available to reinforce lessons learned. To date, Factiva has trained approximately 8,000 customers on Factiva.com using our e-Trainer program.

Factiva Learning Programs offers a comprehensive suite of learning tools for all clients including Web conferencing sessions, discussion forums and downloadable resources. Rollout and training are simplified, especially for enterprise clients launching Factiva.com to diverse and geographically dispersed audiences. Factiva product information is tailored for beginning and advanced users.

These learning options are available on www.factiva.com/learning/

For more information on Factiva Learning Programs, contact Anne Caputo, Director Knowledge & Learning Programs, at anne.caputo@factiva.com or 202-289-2103.

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About Factiva

Factiva, a Dow Jones & Reuters Company, provides content management and integration services to leading organizations around the world. Factiva's products and services help companies integrate news and business information into

their daily workflow to increase organizational intelligence and leverage external and internal content within the knowledge management function.

Factiva services are powered by world class global content, including Dow Jones and Reuters Newswires and *The Wall Street Journal* -- unduplicated in a single service elsewhere. Factiva offers the only single content solution with multiple language interfaces and multilingual content covering more than 8,000 sources.

Built on industry standards and open architecture, Factiva products deliver flexible, extensible, customizable solutions to enable easy integration and use in the enterprise. Editorial and technical consulting, taxonomy application, integration expertise and e-learning programs reflect Factiva's innovative approach to delivering solutions beyond the content.

To find out more about Factiva, visit www.factiva.com or contact us at www.factiva.com/moreinfo.

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