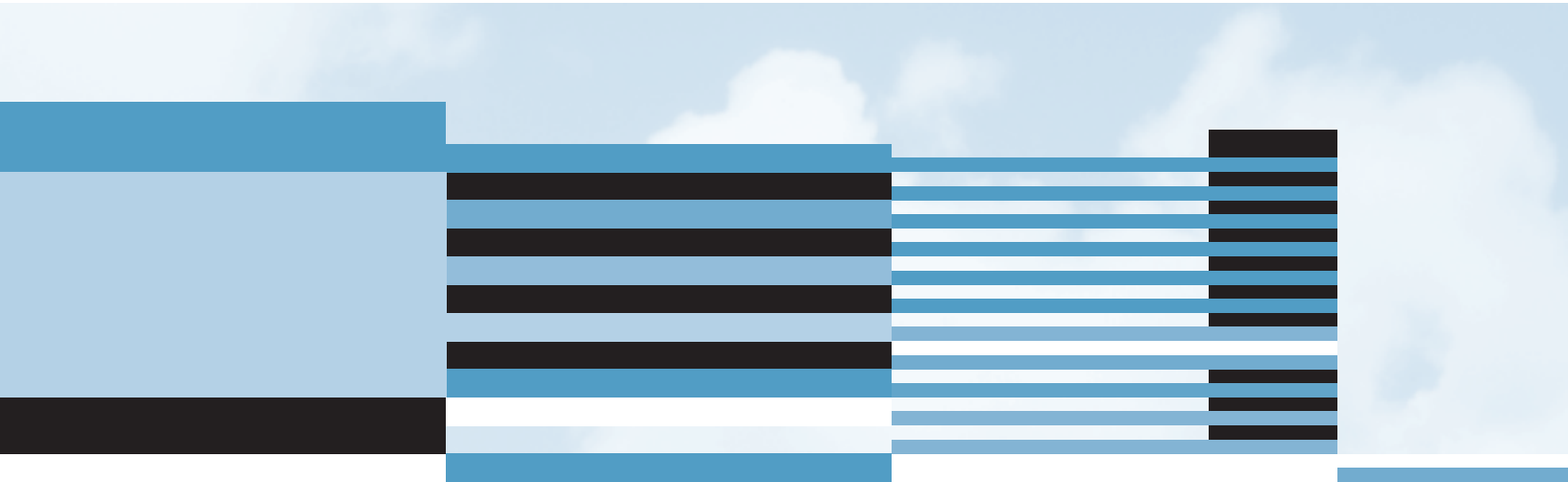


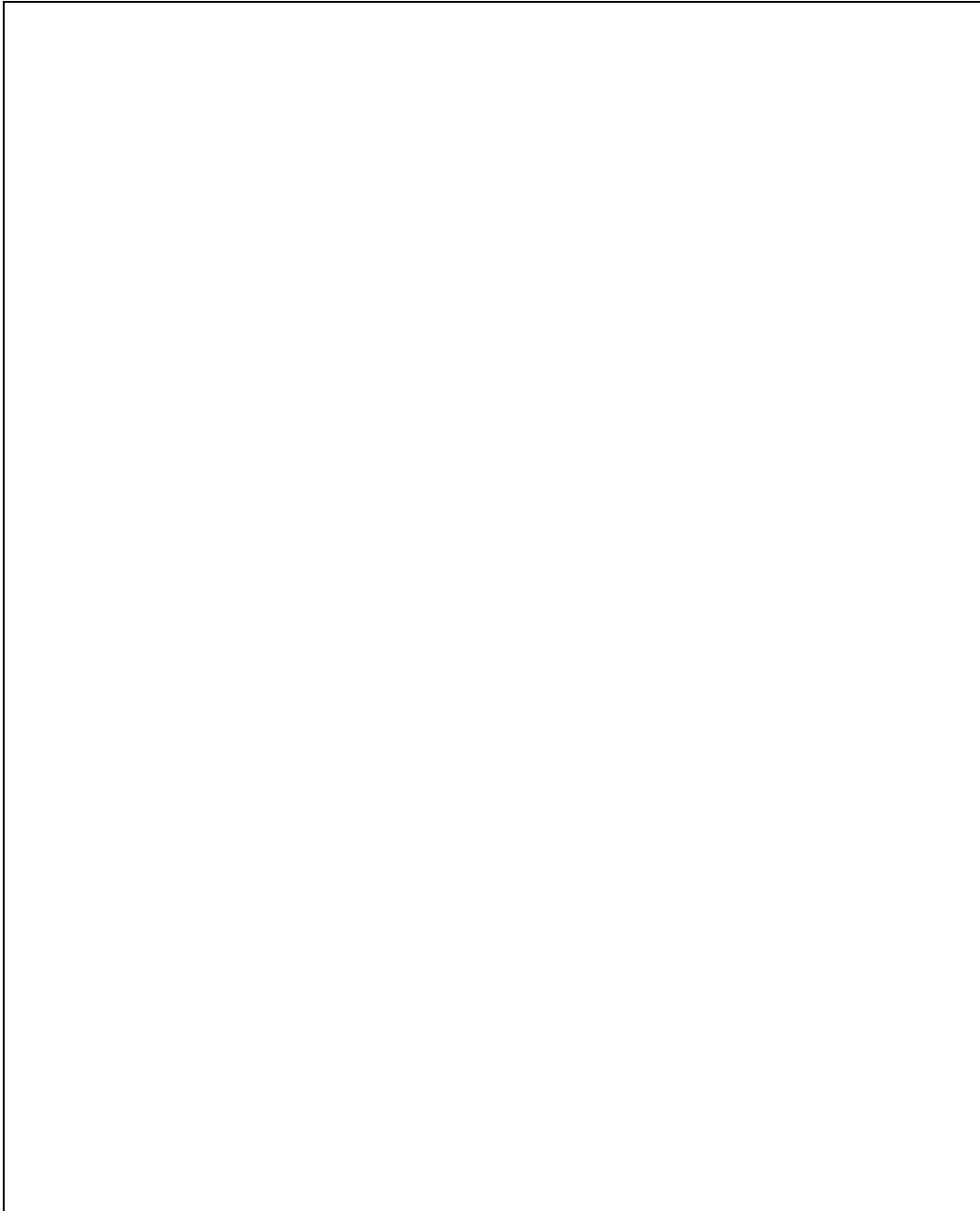
# IBM Mindspan Solutions



## The Future of e-Learning: An Expanding Vision

March 2001





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## E-learning: An overview

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In its short history, e-learning has come a long way, offering increasing benefits with each iteration. Today, organizations are using e-learning to reduce costs, improve quality, and accelerate time to market – business benefits that directly contribute to top and bottom line results. Substantial as these gains are, they will soon be eclipsed, as organizations capitalize on formal and informal learning through the convergence of e-learning and knowledge management. This paper will depict a vision of e-learning that extends beyond the current emphasis on training and learning to a new focus on “time to performance.” These advances will transform learning from a required cost to a strategic priority and a driver of competitive advantage.

*The convergence of e-learning and knowledge management will eclipse current gains*

Given today’s turbulent economic conditions and demanding competitive environment, it is essential that an organization’s employees, partners, and even customers have the requisite level of knowledge and skills. Business leaders know this – in a recent survey of Chief Executive Officers, 70% said that the shortage of skilled employees is a serious problem.<sup>[1]</sup> Moreover, organizations are now facing shorter business cycles, faster product rollouts, and accelerating mergers and acquisitions in an environment where current skills are becoming obsolete at a pace never before seen. In such a state, re-skilling and training are not only necessary, they must become ongoing activities. The companies that realize this, that see a robust learning environment as a strategic priority and a source for competitive advantage, are the ones that will succeed in today’s knowledge-driven market.

As with all other aspects of the modern business world, the Internet has had a transformational impact on the learning environment, allowing for the creation of entirely new models for effective learning. The opportunities that the Internet offers for cost savings and increased productivity are driving training and learning toward an online environment, away from traditional delivery methods such as classrooms and disk-delivered computer-based training (CBT). The online delivery of distributed learning – e-learning – is predicted to grow at 83% a year over the next three years<sup>[2]</sup> as forward-thinking organizations continue to explore and take advantage of the newly created models of high-quality, flexible e-learning.

Even with this rapid adoption, though, the nature of e-learning is continuing to evolve, with each incarnation bringing the potential for greater returns to both an organization’s top and bottom lines. Today, most organizations find success with e-learning at the project level, such as supporting the roll-out of a new product to the sales channel, integrating employees after a merger, or educating business partners on a new procurement system. Others are using e-learning to create an infrastructure to deliver e-learning both on a recurring project basis and on a continuous basis throughout the entire enterprise.

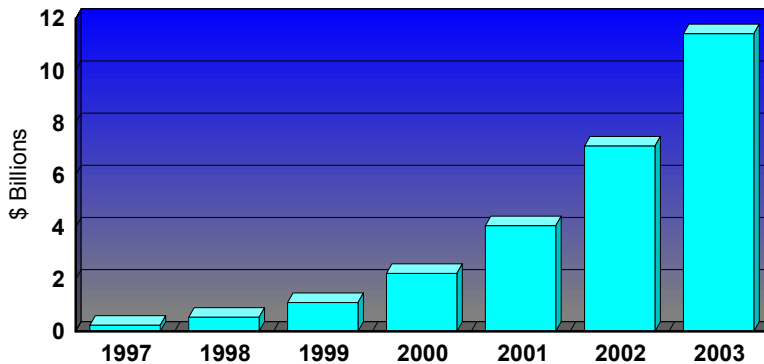
However, as beneficial as these approaches to e-learning are, they only represent a modest portion of the full potential of e-learning. They omit what in reality represents the largest source of learning – the informal learning that takes place on the job or over discussions at the water cooler. Research has shown that informal learning is the principal means of learning for workers, and that as much as 70% of the way employees learn their job is through informal means.<sup>[3]</sup>

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## The growth of e-learning

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The Internet has had a revolutionary effect on how organizations conduct their business, opening up new possibilities for communicating with employees, customers, suppliers, and partners. e-Business has also raised the stakes for organizations, greatly increasing the speed at which they are expected to compete. Just as the Internet has allowed organizations to capture the benefits of e-business, it is now rapidly transforming the way organizations approach learning. For years now, organizations have been turning to distributed learning, in forms such as teleconferencing and computer-based training (CBT), to augment classroom sessions and other more traditional training modes. Now distributed learning is rushing online in the form of "e-learning." To illustrate this, the following chart from a study by IDC predicts that the e-learning market will grow at a compound average growth rate of 83% from 1997 to 2003.



*Growth of e-learning market in the US (IDC, 2000)<sup>[4]</sup>*

Cost savings and higher productivity are the reasons most frequently cited for selecting e-learning solutions. There are other very good reasons as well, notably manageability, flexibility, speed, and learning effectiveness. E-learning can be delivered anywhere, any time, and can provide flexible models, such as just-in-time learning. E-learning systems that deliver course content can monitor student progress, generate reports, and automate the administration of course catalogs and enrollments. Breakthroughs in collaborative learning and learning models are producing effective learning directly linked to business performance and bottom-line results.

*By 2005, 85% of all jobs in the United States will require skilled workers*

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## Business is driving the e-learning revolution

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There are many business pressures behind this shift from traditional methods of training to e-learning. One of the most notable is the growth of the Knowledge Economy, which is driving the **need for skilled workers**. It has been estimated that by 2005, 85% of all jobs in the United States will require skilled workers, compared to only 20% of the jobs in 1950. This pressure is already evident – 70% of CEOs say that finding and retaining skilled workers is a serious problem.<sup>[5]</sup>

The **increasing rate of change in business** is also impacting the move to e-learning. The shift to e-business, shorter product life cycles, increased mergers and acquisitions, and the trend towards globalization are just some of the factors that are causing business cycles to shorten. To keep up in this faster-pace environment and to gain competitive advantage over less agile organizations, organizations need to re-skill employees to operate effectively in the new environment. Indeed, the rate of change has accelerated to the point where learning must become a continuous process, and traditional training methods can no longer keep pace with demand.

*“Knowledge is like milk. It has a shelf life stamped right on the carton.”*

A related trend can be seen in the **shorter half-life of knowledge and skills**. Fifty percent of an employee’s skills and knowledge become outdated in three to five years.<sup>[6]</sup> In some sectors – Information Technology, for example – the half-life period is even shorter. Ford Motor Company Chief Technology Officer Louis Ross summed this up in an address to a group of engineering students:

In your career, knowledge is like milk. It has a shelf life stamped right on the carton. The shelf life of a degree in engineering is about three years. If you’re not replacing everything you know by then, your career is going to turn sour fast.

The **increasing mobility of workers** and the move to home-based work are also driving the trend from classroom-based “just-in-case” learning to “just-enough, just-in-time” e-learning. This trend is accelerated by technological developments. The escalation in the availability of bandwidth and the rapid growth of pervasive devices such as wireless phones and PDAs make it possible to provide access to learning wherever the learner happens to be at the time.

As businesses adjust to the new economy, the value of **leveraging accumulated intellectual capital** as a competitive advantage becomes increasingly crucial. Some studies suggest that effective use of human capital can increase shareholder value by up to 30%.<sup>[7]</sup> This opportunity is leading to renewed interest in Knowledge Management. E-learning, as one of the fundamental aspects of Knowledge Transfer, has a critical part to play in this area.

Finally, the competitive pressure to use working capital more efficiently makes the **cost savings** that e-learning offers all the more attractive. These can be seen both in terms of “hard” savings, such as reduced travel expense, and in “soft” economies, such as the higher retention rates that come with more efficient, blended approaches in areas like professional development.

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## Innovative organizations are using e-learning to solve specific business problems

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The growth in the e-learning market is being driven primarily by innovative organizations that are using e-learning to solve specific business problems. These solutions are often found within a line of business, where e-learning is providing business-critical skills and knowledge to employees, customer and partners quickly and efficiently. A smaller group of organizations are approaching e-learning as an infrastructure that can transform the way learning works within their organization, but even they will often begin with a more tactical approach driven by a specific need. Some examples of recent situations addressed with e-learning are listed below.

**A maker of high-tech products** must cope with accelerated product cycles in a marketplace where products change every nine months. It instituted an e-learning program to train not only its sales force but also its channel partners. The company was able to reduce the time required to educate the sales channel, complete a more rapid new product launch, and achieve greater effectiveness of the new sales campaign.

**As the result of a merger**, a company found itself faced with new employee certification and regulatory compliance requirements, along with the need for training on a broad set of new systems and processes. An e-learning solution delivered the necessary courses to employees across the merged companies, accelerating the effectiveness of the new organization while ensuring accurate reporting on certification and compliance progress.

**A large corporation** wanted to transform a training program for middle managers. An e-learning initiative resulted in less down time for managers due to travel and yielded more efficient learning than classroom-based courses.

These examples underscore the complex business needs faced by enterprises that in turn require effective learning and e-learning models. The lessons learned from numerous engagements show a number of common factors:

- Fast design, development, and deployment of a blended learning environment that augments traditional classroom training with e-learning can make a substantial difference to both the top and bottom lines. E-learning reduces the travel and facilities costs of classroom training, while at the same time reducing the need to distribute materials and media. E-learning also increases productivity by eliminating the need to leave one's workplace while learning. In fact, e-learning has even been found to make learning more effective, with studies finding that people learn 25-40% faster using e-learning.
- Globally distributed organizations – with their complex channel, partner, supplier, and customer relationships – need flexible, far-reaching learning solutions deployed over an intranet or extranet, or through a hosting or ASP arrangement.

*Complex business needs require flexible e-learning models*

- Changes in technology and the marketplace are taking place at an unprecedented pace and must be met by changes in the organization. In order to introduce new business initiatives or new products, enterprises are discovering that they must manage their employees' learning in new ways. Organizations are turning to comprehensive blended learning solutions to address these business needs, and are looking for the vendor who can combine services, content, technology, and delivery options in order to design and deploy learning initiatives quickly and effectively.
- Learning needs to be flexible for the location, timeliness, and style of the person learning, and it needs to be tracked for compliance and provide feedback to the organization. E-learning can be tailored to individual skills and work patterns, and offers people the flexibility to choose their own time and setting for training, as well as the ability to set their own pace.
- The quality of the learning is crucial if it is to be effective and acceptable to the learners. New e-learning models allow organizations to take advantage of blended solutions comprising self-paced courses, collaborative group-learning activities, and instructor-led classes conducted in both virtual and physical classrooms. Collaborative technologies also enable learning communities, which are essential to support the informal knowledge transfer that represents the principal means of on-the-job learning. Given the complex nature of these blended learning solutions, it is essential that they be built and implemented using a proven learning model. The following diagram illustrates IBM's 4-Tier Learning Model, which is employed by IBM Mindspan Solutions to design and implement blended learning solutions.



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A fuller description of this model can be found in the companion whitepaper entitled *E-learning: Building campaigns to support mission critical business initiatives*.



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## Expanding uses of e-learning: From “training” to “learning” and beyond

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The great majority of organizations have only begun to search for ways to build and maintain ongoing capabilities in e-learning. According to a 1999 IBM Mindspan Solutions-sponsored Mercer Management Consulting study, most companies that are using distributed learning today have maintained the traditional focus on “training” – education in preparation for a specific job – and have not yet expanded their vision to the broader uses and possibilities afforded by e-learning. These usage patterns will change as three trends emerge:

- The emphasis will shift from “training” to “learning” – from education in preparation for a job to education as a continuing activity within a career. Looking forward, the emphasis will continue to shift to “performance support” with the integration of knowledge management capabilities.
- E-learning content will expand beyond its current concentration on IT and certification programs and will focus on meeting business needs – shortening time to market, integrating acquired operations, or implementing new systems, for example.
- Customized content will become more important than off-the-shelf courseware as e-learning initiatives focus on an enterprise’s structural goals.

*Emphasis is shifting from “training” to “learning” to “performance support”*

Mercer Management Consulting found that there are innovative enterprises that have moved beyond training to focus on e-learning as a tool for business process transformation. Many of these early-adopters have had success with e-learning as the solution for a specific business process problem. Interestingly, the champions who have fostered these successes have not always been directors of training programs. Instead, they have come from across the organization in areas such as sales and marketing, with e-learning used to speed new product roll-outs, for example, or to maximize time spent with customers.

Many of these early adopters have had to create their solutions on their own, without a great deal of support from the e-learning marketplace. The marketplace is highly fragmented, thronged with companies offering incompatible technologies or content and services focused solely on specialized sub-markets. There are remarkably few vendors capable of offering end-to-end solutions that can meet all of an organization’s e-learning needs.

In fact, many of the “complete Learning Management Systems” (LMS) that claim to enable all types of learning turn out on closer inspection to focus almost entirely on the management and measurement of *training* processes. They add little or no value to the *learning* process. When coupled with their genesis in and focus on enabling classroom learning, these vendors can have a neutral, or even negative, impact on the introduction of true e-learning by perpetuating current training practices. In order to capitalize on all the advantages offered by e-learning and to ensure they are well positioned for future advances, organizations must look at a complete solution as more than just software or content. A true “end-to-end” solution must span the entire value chain of planning services, content development, and delivery technology.

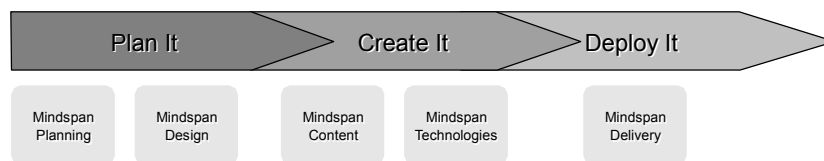
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## Helping organizations to meet changing needs

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It was the recognition of the market need for complete enterprise learning solutions that drove the formation of the IBM Mindspan Solutions group. The IBM Mindspan Solutions group was created to meet an organization's total learning needs by working with them to plan for, create, and deploy e-learning solutions. Leveraging its extensive experience, technologies and worldwide reach, IBM Mindspan Solutions' resources include more than 3,400 services practitioners and a global content development community. These capabilities are fueled by the Lotus LearningSpace Family of Products, offering self-paced, collaborative and real-time learning experiences, tracking and management capabilities, and the seamless integration of course content and authoring tools.

IBM Mindspan Solutions can provide a true end-to-end solution, working with the enterprise as a partner in planning the learning strategy, designing and creating the instructional content, and deploying the delivery technology. The steps of planning, creation, and deployment are matched by five key competencies:



*The future lies in the marriage of project-oriented e-learning, infrastructure development, and knowledge management*

More details on IBM Mindspan Solutions' current capabilities are available at <http://www.ibm.com/mindspan>.

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## Towards the future — Integrated Learning Systems: From business initiatives to infrastructure to enterprise transformation

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As previously discussed, innovative enterprises are using e-learning today as an integral component of business initiatives. These successes are leading to the emergence of enterprise-wide e-learning infrastructures that will spread the benefits of e-learning throughout the organization.

The future of this trend is the marriage of project-oriented e-learning and infrastructure development with the growing capabilities of knowledge management technology into **Integrated Learning Systems** — the technical foundation for end-to-end e-learning solutions that serve the whole organization.

### An Emerging Use: e-Learning Infrastructure

As organizations build upon the success of individual e-learning deployments, they are beginning to institute a common integrated infrastructure for creating, managing, delivering, and tracking a wide variety of e-learning projects. Infrastructure planning, deployment architecture services, content developer training, customization services, and systems integration services are all critical components of these e-learning infrastructure projects. However, the key element is the choice of an e-learning platform designed to support the life cycle of e-learning from course development through management, delivery, and tracking. Support for a robust blended learning model, such as the IBM 4-Tier Learning Model described above, is also crucial, as is conformance with emerging content and interoperability standards.

IBM Mindspan Solutions offers just such a system, providing the full range of accompanying infrastructure services and designed around the Lotus LearningSpace Family of Products, which together are unique in their ability to support the full life-cycle of e-learning and the flexible combination of all modes of learning. Many learning initiatives fail because a particular technology is thrown at the problem without regard for its efficacy or suitability; a blended solution architected according to the IBM 4-Tier Learning Model will ensure that the *appropriate* technology and resources are used to resolve the given business problem.

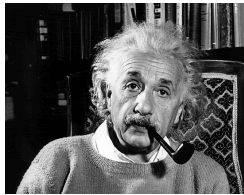
Often, such a solution will encompass physical classroom courses, online courses, and blended solutions that take the best from both worlds. Accordingly, organizations are beginning to look for a learning platform that can serve as the infrastructure for managing both the physical and virtual classroom, while tying in new or existing skills planning and competency development efforts. These requirements are driving near-term development efforts for the Lotus LearningSpace Family of Products and for emerging solutions from IBM Mindspan Solutions.

*Training and even learning are not the end goal...*

## Tomorrow: The Integrated Learning System

Just as e-learning today is evolving from a concentration on specific business initiatives to that of a broad-based learning infrastructure, the future lies with an even more expansive view. This evolution will take the focus from a strict attention on “learning” to the *real* issue organizations must grapple with every day – that of “time to performance.” Organizations need employees who can perform their jobs at the level of competence required to meet business goals; training and even learning are not the end goal, they are simply possible (and partial) means to this objective. Simply put, instead of paying attention to how much time is spent in training, organizations should focus on making sure that everyone has the required skills and knowledge at the right time.

The following anecdote serves to illustrate the point:



*National Portrait Gallery,  
Smithsonian Institution*

Albert Einstein was once asked by a reporter for his telephone number. The great man went to a telephone directory to retrieve the number. When questioned about this by the incredulous reporter, he replied, “I have so many things to remember. I never bother to memorize anything that I can easily look up.”

Clearly, it caused no particular performance problem for Einstein to have to take the short time to look up his telephone number on the few occasions when he needed it. However, one could imagine a different situation had he needed to refer to a user manual in order to answer the phone each time it rang!

The point of this anecdote is that sometimes an informal, performance support approach works best, while at other times formal learning is needed.

For example, if the requirement is to train a new call agent on the intricacies of the call center systems, call handling procedures and customer relations skills, it is likely that some type of formal learning program will be the most efficient path. However, once trained, small or infrequently occurring gaps, such as the process for handling an obscure customer situation, will typically be better filled by a job aid, peer support, or other informal approach.

Small, informal performance support solutions will typically cost less to prepare and deliver, in terms of time and resources, than more formal learning solutions. It is more efficient to resolve small, infrequent gaps using informal methods, while larger gaps will require still more formal learning activities.

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## E-learning meets knowledge management

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The focus of e-learning up to now has been on the enablement of the formalized learning that takes place via courses. The informal learning that takes place within the context of a community of practice – the learner’s peers and workgroup – plays a crucial role in enabling a focus on time to performance. This informal learning which takes place in learning communities – whether they be at one’s desk or over discussions at the water cooler – in actuality represents the principal means of learning for workers. Research has shown that as much as 70% of the way employees learn their job is through informal means.<sup>[8]</sup>

This informal learning has traditionally been the domain of Knowledge Management systems, with little interaction with the world of e-learning. When viewed from a time to performance standpoint a much broader approach is needed. The future of e-learning lies not in content delivery systems or even Learning Management Systems, but at the intersection of e-learning and knowledge management. A system that can accommodate both of these aspects – an **Integrated Learning System** – is necessary to allow organizations to take a performance-focused approach to business initiatives, tailoring the level of e-learning, knowledge management, or performance support provided for each given situation. Deployed enterprise-wide and shared with employees, suppliers, partners, and customers, the Integrated Learning System will enable organizations to receive the maximum return on their investment in learning.

The Integrated Learning System will combine formal course learning with ad hoc, just-in-time, performance-related personalized learning. Advances in knowledge management technology are making it possible to automatically provide this informal support via techniques such as expertise location and content catalogs as offered by the Lotus Knowledge Management family of products.

The structure of the Integrated Learning System will be built on past successes in e-business: best practices in areas such as standardized learning objects, portal design, personalization, aggregation of content, and e-commerce will be applied to the Integrated Learning System as these systems become the central learning portals of all aspects of learning for individuals and communities (departments, teams, practice groups, etc.).

The need for such a solution becomes all the more apparent when one compares it to other e-learning products currently on the market. Most learning portals today are simplistic sites that provide access to little more than course catalogs. Many of the Learning Management Systems on the market today do not offer much more than this. What differentiates the Integrated Learning System from these existing offerings is its ability to provide a complete learning and performance support environment coupled with the management and administrative functions needed to support this new time to performance paradigm.

*The Integrated Learning System will allow organizations to take a performance-focused approach to their initiatives*

*Recognizing the need  
for an Integrated  
Learning System*

IBM Mindspan Solutions has recognized the need for an Integrated Learning System, and is focusing its e-learning efforts to help it meet visionary goals for enterprise-wide learning:

- High-quality execution of the basics: training and certification courses, management and project development courses and employee orientation.
- Support for learning communities based on the employee's role in the organization, so that individual learners will find themselves naturally supported both by their peers and by the accumulated knowledge of the enterprise via Knowledge Management.
- The functionality to allow individuals to track and manage their own personal and professional development.

These objectives will be critical to every organization seeking to utilize learning as a tool for enterprise transformation. The long-term vision of IBM Mindspan Solutions is to be the trusted partner to these enterprises, working with them to create and manage complete learning solutions that incorporate the Integrated Learning System.

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## Conclusion

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Distributed learning has taken on many forms over the years, with each incarnation offering organizations new opportunities and benefits. E-learning is no exception – when executed according to a well-thought-out learning model and with a partner that can provide appropriate and best-in-class solutions, it will directly improve business results. Some organizations have just begun to use e-learning to speed the roll-out of new products, improve reporting and regulatory compliance, and to ease the friction of mergers and reorganizations; others have taken the next step towards instituting an enterprise-wide e-learning infrastructure. But even this is just the beginning, as greater benefits await companies who continue up the evolution from “just-in-case” training to “just-in-time, just-enough” learning and finally to “time to performance.”

Fully capitalizing on the benefits of e-learning at any of these stages requires far-reaching solutions encompassing services, content, technology and deployment options. It was the recognition of the need for these complete enterprise learning solutions that drove the formation of the IBM Mindspan Solutions group. IBM has forged this e-learning solutions organization from the best of its learning competencies in planning, content design and creation, technology, and delivery. Whether the needs revolve around solving specific business initiatives, establishing an enterprise-wide e-learning infrastructure, or creating a solution to improve time to performance, organizations around the world continue to rely on IBM Mindspan Solutions.

- [1] Maheu, R. T. (1998). High Tech Firms Positive about the Economy, [http://www.i2m.org/PricewaterhouseCoopersCafe/KL\\_98jan.html](http://www.i2m.org/PricewaterhouseCoopersCafe/KL_98jan.html)
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- [3] Education Development Center, Inc (1/1998), "The Teaching Firm (Where Productive Work and Learning Converge)"
- [4] IDC (2000)
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- [6] Moe, M (2000). The Knowledge Edge. Corporate e-Learning. p.229
- [7] Ibid. p. 295
- [8] Education Development Center, Inc (1/1998), "The Teaching Firm (Where Productive Work and Learning Converge)"





