The Future of e-Learning:
Understanding the ROI Benefits of Modern Corporate Training Tools
INTRODUCTION: MAKING SENSE OF THE E-LEARNING

Corporate e-Learning technology has a long and diverse pedigree. As far back as the 1980s, companies were adopting computer-based training to supplement traditional classroom activities. More recently, rich web-based applications have added streaming audio and video, real-time collaboration and other new tools to the e-Learning mix.

At the same time, the growing availability of informal learning tools—a category that includes everything from web searches to social media posts—are having a major impact on how, where and when employees engage in job-related learning.

In some ways, these changes have turned the corporate e-Learning landscape into a place that workers 20 years ago would not recognize. According to analyst Josh Bersin, for example, more than 70% of all corporate training today is now done online.¹

In spite of these changes, some aspects of e-Learning have not evolved. Many “new” learning applications simply provide another channel for presenting traditional classroom materials, such as lectures and presentations. As a result, e-Learning often continues to be a relatively passive, highly structured activity that is rooted firmly in the past.

Over the next several years, this situation will change. New technology promises to take e-Learning out of the traditional, classroom-based paradigm and into a true “digital native” context. These new e-Learning tools will allow employees to engage in more active and realistic training activities, and they will incorporate emerging social learning and informal learning methods.

This white paper will explore the nature and implications of these next-generation e-Learning trends. Specifically, it will answer three fundamental questions:

1. **What unique traits set today’s cutting-edge e-Learning tools apart from their predecessors?**

2. **What are some specific examples of next-generation e-Learning tools?**

3. **How can these tools increase e-Learning ROI and enterprise productivity?**

The changes described in this paper have significant implications for companies that invest in e-Learning programs.
The next-generation e-Learning tools discussed in this white paper generally share some combination of five key traits. While none of these traits are necessarily unique to e-Learning technology, they generally represent a significant departure from the training methods associated with traditional e-Learning or with many older, classroom-based training techniques.

**NEXT-GENERATION E-LEARNING: 5 STRATEGIC SHIFTS**

- **Active vs. Passive Learning**
- **Linear vs. Non-Linear**
- **Rise of Social Learning**
- **Informal Learning Processes**
- **Mobile Learning**
Passive learning methods continue to play a major—and even dominant—role in many corporate training programs. Employees who engage in passive learning activities are generally expected to sit, listen and read. They have very little control over the learning environment, and their ability to interact with an e-Learning system may be limited to clicking the “next” or “previous” buttons on a computer screen.

This passive learning paradigm is simple, relatively inexpensive and easy to implement. Yet passive learning is also less effective; employees are less likely to translate what they learn into practical knowledge, and they are forced to focus on regurgitating what they learn rather than developing problem-solving skills.

Active learning, by contrast, is based on learning by doing. Employees are presented with multiple opportunities to apply their knowledge, practice their skills and receive real-time feedback on their activities. Active learning also emphasizes hands-on experience in real-world situations, rather than asking students to learn by watching or reading about hypothetical situations.

As we will discuss in the next section, games, simulations and immersive environments are all ideal platforms for applying an active approach to e-Learning.

**ACTIVE LEARNING AT A GLANCE**

**Key Traits:** Employees learn by doing; training includes a strong hands-on component.

**Pros:** Develops problem-solving skills; improves engagement and retention.

**Cons:** More expensive and complex to implement than passive learning.
LINEAR VS. NON-LINEAR LEARNING

Traditional e-Learning relies on a linear approach to organizing and presenting knowledge. Course material follows a predetermined syllabus; each employee is expected to follow roughly the same path through a carefully-defined training process. In this sense, linear e-Learning is actually a regression from traditional, face-to-face learning methods, where the interaction between an employee and instructor can be dynamic and highly spontaneous.

Non-linear e-Learning techniques attempt to restore this sense of spontaneity to the learning process. These e-Learning tools are designed to give students multiple opportunities to comprehend a given subject; the student may vary his or her learning activities based on individual preferences, skill levels and educational needs.

Any computer-based e-Learning system can have non-linear components. Web-based content, for example, often employs hyperlinks that allow students to explore instructional content in many different ways. More advanced e-Learning tools, however, such as virtual world simulations and social learning platforms, are especially adept at helping students acquire knowledge in a non-linear manner.

Non-linear e-Learning techniques are intended to restore a sense of spontaneity to the learning process.

NON-LINEAR AT A GLANCE

**Key Traits:** Employees are given multiple paths to learning; training is flexible and fluid.

**Pros:** Simulates face-to-face learning processes; encourages spontaneity.

**Cons:** Works best with complex e-learning simulations.
The term “social learning” naturally calls to mind social networking platforms such as Facebook, Twitter and LinkedIn. Yet social e-Learning tools can include a wealth of other options, including blogs, wikis, discussion groups, email and online content discovered using search tools.

Employees are more likely to engage in social learning on an as-needed basis, rather than using it as part of a formal training regimen. This is because social learning methods are especially well-suited to dealing with work-related problems as they occur; an IT employee dealing with an unfamiliar technical problem, for example, might turn to a social networking group or an online forum for advice.

Social learning also gives less extroverted employees a chance to engage in active, collaborative learning activities without the pressures associated with a traditional classroom environment.

**SOCIAL LEARNING AT A GLANCE**

Key Traits: Employees collaborate and share knowledge to achieve learning objectives.

Pros: Highly intuitive; makes excellent use of informal learning processes.

Cons: May create security, privacy and knowledge management issues for companies.
In addition, social learning is associated with a specific group of enterprise applications designed to combine collaboration and knowledge sharing with a set of tools that can capture informal organizational learning. These include tools for creating and sharing social content such as blogs, wikis and discussion threads; internal directories of subject-matter experts who can serve as learning resources; and social networks that can mimic the functionality of a site like Facebook or LinkedIn while still preserving an acceptable level of security, privacy and administrative control.

Social learning does present unique challenges for businesses. It can create security and privacy concerns, and as an example of informal learning (more on this concept in a moment) it can be difficult to guide social learning activities to meet specific knowledge transfer or employee development goals. Yet social learning is also an extremely valuable and popular learning method, which explains why it plays an increasingly prominent role in next-generation e-Learning technologies.
INFORMAL LEARNING PROCESSES

There is nothing new about informal learning; it encompasses almost any sort of learning activity that occurs through routine, largely unstructured interactions. Informal learning generally happens in an on-demand context. It is spontaneous and highly practical; in a workplace environment, informal learning is usually employed to address questions or problems that arise during the course of a typical day.

The evolution of the Internet in the late 1990s transformed the notion of informal workplace learning. IT employees, for example, now routinely turn to Google and Bing searches to solve stubborn or unfamiliar problems.

While these informal learning processes are convenient and often very effective, they also present drawbacks: According to one recent study, more than two-thirds of all knowledge workers now feel that their biggest learning challenge is an “overwhelming amount of information,” rather than a dearth of learning resources.²

Given the benefits of informal learning methods, and the fact that younger knowledge workers overwhelmingly embrace these methods, next-generation e-Learning solutions must learn to incorporate informal learning methods while helping employees to apply this knowledge consistently and effectively.

MOBILE LEARNING

The growing use of smartphones and tablets, combined with the spread of employee-owned mobile devices in the workplace, creates both challenges and opportunities for enterprises. On one hand, almost every employee now has on-demand access to a wide variety of e-Learning tools and content. On the other hand, the process of creating and maintaining so-called “m-Learning” content adds a layer of cost and complexity to a company’s existing e-Learning activities.

In spite of the added complexity, m-Learning capabilities are now an essential part of any forward-looking e-Learning strategy. According to one recent study, nearly 70% of the respondents cited mobile learning as an essential component for their learning management system (LMS) platforms. In addition to providing exceptional flexibility for employees to train on their own time and at their own pace, mobile learning can be a powerful tool for corporate training instructors who want to build blended e-Learning programs.

MOBILE LEARNING AT A GLANCE

**Key Traits:** E-Learning tools and content are adapted for use on mobile devices.

**Pros:** Allows employees to train on their own time and at their own pace.

**Cons:** Can be costly to implement; not suitable for immersive e-Learning.

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NEW E-LEARNING: THE IMPACT ON BLENDED LEARNING

Corporate e-Learning practitioners are familiar with the concept of blended learning, which aspired to combine different learning modes—live classrooms, computer-based training, multimedia, and the like—into something greater than the sum of its parts. In practice, however, a typical “blended” learning environment often devolved into a set of delivery options; students could, for example, choose between in-person classroom training or a roughly equivalent online course.

By using the five fundamental e-Learning methods described above, instructors are able to offer true blended learning environments that seamlessly combine in-person and interactive elements. A face-to-face training session could, for example, incorporate video-based content, interactive gaming tools, social networking resources and online content repositories. The net result of these combinations will be far more effective and flexible e-Learning applications.
A CLOSER LOOK AT NEXT-GENERATION E-LEARNING APPLICATIONS

Having discussed the key traits that define next-generation e-Learning tools, it's useful to apply these traits in more specific terms. Three categories of relatively new, but rapidly evolving, e-Learning applications are detailed in the following section.

- Immersive Simulations
- ‘Virtual World’ Simulations
- Gamification In Enterprise E-Learning
Simulators are a familiar and time-tested training option in certain industries. Airline pilots, for example, have long been required to log hours in flight simulators in order to earn or maintain their equipment ratings. For most businesses, however, these types of immersive simulations were either prohibitively expensive or simply incompatible with an organization’s training objectives.

The first of these challenges—the expense associated with creating realistic simulations—has diminished as the cost of powerful computers, displays and graphics systems has dropped. At the same time, in recent years immersive simulations have appeared in a much wider range of industries and use cases. These simulations share some common characteristics, including:

- The ability to replicate aspects of a realistic workplace environment
- A focus on job-related problems or challenges, including those involving a high degree of potential cost, business risk or safety hazards
- The ability to apply complex problem-solving skills within the simulation

IMMERSIVE SIMULATIONS AT A GLANCE

**Key Traits:** Allows employees to train with realistic tools and scenarios.

**Pros:** Employees can apply complex problem solving and decision skills.

**Cons:** Complex simulators can be expensive.
IMMERSIVE ENVIRONMENTS AT WORK

Researchers at the University of British Columbia have identified several examples of how industries can supplement traditional training with immersive simulations. These include Impala Platinum, a South African mining enterprise that created a “virtual mine” simulator to train workers in hazard recognition and safety procedures—a training method that workers favored heavily over classroom or on-the-job training.4

In another example, Bosch, a manufacturer of industrial technologies, used a Web-based simulation tool to train technicians and sales personnel on pneumatic and hydraulic components. As a result, Bosch was able to accelerate its training process—a major advantage in an industry known for its short product lifecycles.5

A final example, involving a training simulator created for utility Xcel Energy, offers an especially clear example of how an immersive simulation can bridge the gap between training scenarios and real-world situations. The company’s control room simulator exposes power transmission facility trainees to equipment failures, outages and similar problems; the trainees get hands-on experience with the skills and decision-making processes required to minimize the impact of these crises.

Xcel trainees who work in the simulator are exposed to intensely realistic training scenarios, allowing instructors to test and evaluate them in ways that simply aren’t possible using textbook exercises or oral exams. “We’ve found that while eight out of 10 operators do well on the oral portion of operator qualification, when we sit them down to the simulator, we can quickly identify weak spots where they haven’t had enough training or experience,” said Xcel Energy manager Bob Staton.

4 “Simulation In Corporate Learning: A Key To Competitive Edge?” (http://sites.wiki.ubc.ca/etec510/Simulation_in_Corporate_Learning_-_A_key_to_competitive_edge%3F), retrieved 8/17/2012.
5 Ibid.
“Over the past two years, we’ve been fine-tuning it so what happens in the simulated environment actually feels like reality,” Staton added. “This is important because some operators could go their whole career without seeing a major outage.”

These types of immersive simulations exemplify several of the key traits associated with next-generation e-Learning tools. They invariably demand an active approach to learning; employees are required to apply the skills they learn in order to solve real-world problems. They also take a non-linear approach to learning, since they usually offer multiple courses of action and focus on results, rather than on memorizing the “correct” answer to a particular question. And by combining immersive e-Learning environments with other learning tools, instructors can develop more compelling blended-learning solutions.

‘VIRTUAL WORLD’ SIMULATIONS

The immersive simulations described above focus mostly on an individual trainee’s ability to perform a specific set of work-related tasks (e.g. flying a plane or fixing a power outage). Yet there exists a somewhat different category of simulations that focuses more on interpersonal relationships—including co-workers, instructors or third-party roles such as customers.

These multi-player environments are often referred to as virtual worlds—a term that encompasses any sort of computer-based simulated environment where users interact and communicate with one another. This is a useful distinction, since we will focus here on the social, collaborative and interpersonal benefits of virtual-world simulations.

Like other types of immersive e-Learning environments, virtual worlds have evolved rapidly in recent years due to the growing availability of broadband Internet access and powerful, inexpensive desktop computer hardware. As a result, according to a 2011 survey of U.S. companies, 60% of the respondents said they plan to increase spending on “virtual events and environments,” and 42% of the companies surveyed use virtual environments for employee training.7

VIRTUAL WORLD SIMULATIONS AT A GLANCE

**Key Traits:** Computer-based, simulated environments where users interact and communicate.

**Pros:** Adds a social, collaborative and interpersonal angle to computer simulations.

**Cons:** Can be expensive; may not capture real-world communication subtleties.

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Virtual worlds allow corporate training organizations to emphasize active learning with a wealth of non-linear learning options. Perhaps more important, they place a heavy emphasis on social learning; teamwork, collaboration and the management of workplace relationships all play a major role in many virtual-world simulations.

Some of the qualities that draw corporate training users to virtual worlds are similar to those that distinguish the simulation environments described above: access to 3D immersive environments, high-fidelity graphics and realistic physical effects, and the ability to simulate risky or dangerous environments at a very low relative cost.

Virtual world platforms offer additional advantages based on their ability to offer compelling interaction and communication:

- Individual identities, or “avatars,” that participants can customize (within reason) to suit their preferences and needs
- The ability to work in teams and to conduct complex role-playing exercises
- Nearly unlimited options for interacting with fellow students, making decisions, and choosing solutions—both right and wrong
A power plant simulation, developed by GE Contractual Services, offers a typical example of the sort of team-based training scenarios (a power plant repair team) and high-risk situations (power plant turbine operations) that become possible through the use of virtual world technology. In an even more dramatic endorsement of the power of these tools, researchers cited U.S. Special Forces officers who had “positive reactions after participating in virtual-world scenarios simulating stressful, complex situations.”

8 Ibid.

Finally, a study of using virtual world technology for training assessment and management of trauma cases found that students considered the simulation as good as real-world scenarios involving a training manikin. In the case of disaster drills, 62% of the students said that the virtual world environment was as good as or better than traditional, classroom-based training scenarios.

9 Ibid.

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The word “gamification” is frequently cited as a new e-Learning technique, yet it is often poorly defined beyond the use of “game mechanics” in a business context. A useful and comprehensive definition of the term was laid out in a recent Pew Internet study on the subject:

“The word ‘gamification’ has emerged in recent years as a way to describe interactive online design that plays on people’s competitive instincts and often incorporates the use of rewards to drive action—these include virtual rewards such as points, payments, badges, discounts, and ‘free’ gifts; and status indicators such as friend counts, retweets, leader boards, achievement data, progress bars, and the ability to ‘level up.’”¹⁰

As the study points out, neurologists have observed a biological basis for the use of gamification; by promoting “feel good” chemical reactions in the brain, these tactics can improve learning, participation, motivation and even response times among trainees.¹¹

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**GAMIFICATION AT A GLANCE**

**Key Traits:** Applying elements of game play to e-learning tools.

**Pros:** Can be simple and inexpensive to implement.

**Cons:** Selecting appropriate gamification elements can be tricky.

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¹¹ Ibid.
Gamification in this context can be used in any number of ways to supplement other e-Learning methods. Trainees working on a simulator, for example, might accumulate proficiency badges, score points for successfully navigating scenarios, or move up to more difficult scenario “levels” just as they would in a recreational game. The same system of incentives could be applied to teams of employees training together in a virtual world, allowing them to compete against other teams.

Gamification tactics also work extremely well with two of the major strategic innovations described in this paper: mobile learning and social learning. Gamification is, in fact, an inherently social process; students assess and validate their own learning experiences, and their achievements, by comparison to their peers. And while mobile e-Learning content is inherently less immersive, the ability to enhance this content with gamification tactics can make it engaging and relevant to employees.

Gamification can improve learning, participation, motivation and even response times among trainees.
PUTTING GAMIFICATION TO WORK

Deloitte Leadership Academy (DLA) is one example of an enterprise that has applied gamification principles to its e-Learning programs. According to a 2012 case study, DLA trains more than 10,000 corporate executives using this process, which includes the use of a leaderboard to rank trainees’ progress and to provide immediate recognition for the leaders. DLA also allows participants to earn “specialist badges” for completing specific lesson segments.

James Sanders, the product and client manager for Deloitte Digital who oversees the program, acknowledges the powerful psychological impact of gamification tactics. “Basically, you’re giving a bit of a dopamine release to the user whenever they achieve something, and that drives that semi-addictive behavior,” Farrall explained. 12

Gamification is also relevant to more prosaic training activities. In 2011, Microsoft introduced “Ribbon Hero 2: Clippy’s Second Chance,” that applied game mechanics to a series of Microsoft Office training modules. The tactics employed, including multiple game levels and scoring leaderboards, earned consistently positive reviews. It also turned a fundamental business training activity that many people dread into a far more engaging and even addictive activity. 13

One argument against gamification is that it trivializes business activities and quite literally encourages employees to treat their training like a game. This argument, however, does not stand up to close scrutiny—consider, for example, the military’s use of gaming scenarios and badges (to name just two examples) to train and motivate soldiers in potential life-or-death situations. And firms like Deloitte, which engages with clients in heavily regulated industries, disprove the notion that gamification is incompatible with “serious” business environments.
The ROI of e-Learning is an extremely complicated topic. Hard ROI figures, in terms of productivity gains or other relevant metrics, can be difficult to come by. Nevertheless, it is possible to make several observations that point either directly or indirectly to the ROI companies can expect to achieve using next-generation e-Learning tools.
THE CASE FOR HARD ROI

While the quantitative data linking next-generation e-Learning is still limited, the available data suggests that advanced, immersive e-Learning tools do, indeed, have a positive impact on ROI. Consider two examples:

- According to a 2008 eLearning Guild study, 93% of the surveyed organizations that use game-based learning said it was superior to other forms of rich-skill practice, and 76% reported a positive ROI.14

- In a more specific example, the Montreal Public Transit System saw a 50% reduction in training time and a 32% increase in overall employee performance after implementing an immersive e-Learning solution.15

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15 Ibid.
According to a 2010 study, learners retain an average of just 5% of the information taught through traditional, instructor-led training. That compares to the following retention rates associated with other teaching methods:

- See/Hear Lecture: 5%
- Reading: 10%
- Audio Visual/Video: 20%
- Demonstration: 30%
- Discussion Group: 50%
- Practice by Doing: 75%
- Teaching Others: 90%
- Immediate Application of Learning in a Real Situation: 90%

The implications of this research are clear: Employee training that involves elements of social learning, informal learning and active learning will significantly boost knowledge retention rates. This improved retention, in turn, will lead naturally to greater proficiency at workplace tasks and higher productivity.

Consider also, as discussed above, that immersive simulations and virtual world environments provide ideal platforms for training exercises that are risky, impractical and/or cost-prohibitive in a real-world classroom setting. In other words, advanced e-Learning tools provide precisely the kind of immersive, hands-on training that leads directly to superior knowledge retention.

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ADVANCED E-LEARNING AND EMPLOYEE ENGAGEMENT

Today’s younger workers—commonly referred to as Millennials—are often assumed to be the best audience for e-Learning tools that employ immersive or game-related elements. It is also often assumed that women are less likely than men to embrace next-generation e-Learning tools that employ game-like environments.

According to the Entertainment Software Association, however, the typical most frequent game purchaser is 35 years old—and 47% of all game players are women. In addition, two thirds of these users play games with others, either in person or online.  

These numbers suggest that a large number of knowledge workers are already familiar with, and prepared to embrace, next-generation e-Learning tools. They are also likely to view these tools as a suitable environment for social learning situations, and many of them are comfortable enough with these next-generation training environments to begin using them quickly and effectively. As a result, these employees are more likely to look favorably upon employers that offer advanced e-Learning programs—and this attitude, in turn, can have a positive impact on employee engagement and job satisfaction. According to a 2010 University of North Carolina Kenan-Flagler Business School study, for example, employees trained with on-demand, online e-Learning programs tend to be more engaged, more loyal to their employers and ultimately more productive.  

E-LEARNING AS A COMPETITIVE ADVANTAGE

While advanced e-Learning methods hold a broad generational appeal, it is difficult to overstate the impact these methods have on Millennial knowledge workers who have spent their entire lives working with web applications, social media and immersive gaming environments. According to one estimate, 36% of the nation’s workers will be Millennials by 2014, and that will increase to 46% by 2020. Training these employees to keep up with evolving technology and business trends will be a major challenge, as will persuading these employees to stay put, rather than moving constantly from one employer to the next—a practice that one writer describes as “multi-careerism.”

In this dynamic and highly competitive market for knowledge workers, advanced e-Learning tools will give some enterprises a significant competitive advantage. Firms that continue to spend only on traditional classroom training or first-generation e-Learning may sacrifice employee productivity while also experiencing higher rates of employee turnover. Workers who expect—and demand—ongoing training will also demand training methods that take full advantage of the technology they grew up with.

While these opportunity costs are difficult to quantify, they are very real—and they will increase rapidly as today’s “new” e-Learning technology merges into the corporate mainstream.

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CONCLUSION: NEW APPROACHES TO CORPORATE E-LEARNING

The e-Learning techniques described in this white paper are capable of changing how, where, when and even why many enterprises deliver employee training. They offer a very different approach to learning, emphasizing an active approach that encourages students to apply knowledge and to develop problem-solving techniques in realistic training environments. They also place greater emphasis upon social learning; they offer non-linear learning options designed to engage and challenge students; they give employers the opportunity to embrace informal learning methods; and they deliver new opportunities for blended learning offerings.

Each of these improvements carries its own costs, and in some cases its own downside risk—many immersive simulation platforms, for example, are expensive and complex, and not every employee will embrace these new e-Learning tools. In spite of these caveats, however, it is clear that corporate e-Learning is rapidly entering a period of major change and rapid growth—and that the companies adopting next-generation e-Learning methods stand to reap significant benefits.
Benchmark Learning has been meeting business’ education needs for 25 years, specializing in the development of technical, process, business and leadership skills for professionals around the country. Services include eLearning, custom learning simulations, technical writing, staff augmentation, On-Demand Learning and instructor-led training. These services help businesses empower employees to learn what they need, when they need it and how they need it. Providing a true, blended learning solution maximizes knowledge gain, retention and usage, ultimately increasing company productivity and profitability. By questioning, listening and assessing your needs, Benchmark Learning builds and delivers learning solutions that support your business initiatives. Many Fortune 500 companies have benefited from this unique, all-encompassing approach to corporate learning.

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