*Just in Time*

# The Beyond-the-Hype Potential of E-Learning

**By Katie Paris & Mario Morino**
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"Essential reading for understanding how e-learning will fundamentally change the way we transfer knowledge."

— Earving L. Blythe, *Vice President Emeritus for Information Technology and CIO, Virginia Tech*

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# Introduction by Mario Morino

In 2012, at the White House Forum on Philanthropy and Innovation, I introduced the idea of an online academy for performance-driven nonprofit executives and managers. I hoped the idea would trigger thinking about how e-learning could help address the social and public sectors' acute need to attract, develop, and retain talent. To my surprise, participants began talking about this academy as though it were a fait accompli—that is, they were assuming that the first online courses would be available soon.

Creating an academy is light-years beyond the capacity of the Morino Institute. But because of the very positive reaction to the concept, our team decided to learn more about the state of e-learning and its potential as an agent for change.

We did not start with significant expertise in e-learning, so we used the landscaping process that I had learned in my business life to understand and assess a new technology, market sector, or major trend. My colleague Katie Paris and I spent almost a year consulting more than 100 leading thinkers, practitioners, entrepreneurs, and analysts with deep expertise and broad perspectives. We are especially grateful to those we highlight in **Acknowledgments**. Given the scope of this topic, we cannot bill our year of learning as exhaustive or fully comprehensive; nonetheless, we came away convinced of the potential that e-learning offers for developing talent and improving program and service delivery—even factoring in the hyped promises and overzealous predictions that often accompany these advances.

Whether you're an executive director, social worker, teacher, youth worker, caregiver, or performance specialist, you face an intense need, as part of what you do each day, to help people develop and grow. Imagine being able to access exactly what you need at the very time you need it, in a format that's quick and easy to digest and apply. Imagine further e-learning for communication, orientation, and specialized education—such as a teacher **preparing a lesson**, a business manager or CFO learning **about investments and retirement planning**, or a volunteer working with the elderly getting the contextual "how-to" orientation that is so often ignored. In the same way that some teachers are already enhancing the classroom experience through their use of **digital content** and **Web 2.0 tools**, imagine case managers and other service providers using social media to ask questions in real time and integrating e-learning content into the trainings and support they provide to make illustrations more vivid and concepts more concrete.

We plan to write a companion paper that will offer insights on the academy concept and how e-learning could be meaningfully applied to talent development in the social and public sectors (honestly recognizing what it would take and why attempts up to this point have fallen short). But because e-learning is likely to play a critical role in how knowledge is accessed and transferred in all aspects of life, we have written this document for all leaders, managers, and anyone interested in e-learning.

# Executive Summary

In the movie *2001: A Space Odyssey*, the computer HAL 9000 made humanity's vast troves of knowledge immediately accessible. In 2014, this science-fiction vision is quickly becoming reality. We are "rapidly moving to a point where what you know is less relevant than how you learn and how fast you can adapt how you learn over time," in the words of **Mu Sigma** CEO Dhiraj C. Rajaram. While the media has widely reported significant disruption in our education sector, particularly higher education, Rajaram's forecast puts front and center the potential of e-learning to fundamentally change the way we deliver, process, and transfer knowledge across all sectors of our economy, far beyond the confines of the formal education field.

Online distance education has been around for a long time, but what we're witnessing today is qualitatively and quantitatively different. We now have an Internet awash in e-learning offerings, new ed tech companies cropping up overnight, Silicon Valley investing millions, innovations emerging from outside education's mainstream, and people in their living rooms learning how to program.

As with so many of the new tech and online opportunities of the past, however, the hype surrounding e-learning makes it challenging to find the substance. As James Shepard of the nonprofit human capital management consulting firm AchieveMission reminded us, "Early failures made [the introduction of tablet computers] more difficult for Steve Jobs to build internal support at Apple and for long-standing industry experts to **see the new opportunity**." A recent *New York Times* article, **"After Setbacks, Online Courses Are Rethought,"** noted that "some draw an analogy to mobile phones, which took several generations to progress from clunky and unreliable to indispensable." And Sebastian Thrun, founder of the online course provider Udacity (and also the inventor of the self-driving car and the project lead on Google Glass), acknowledged, "Few ideas work on the first try. Iteration is key to innovation. "

So why all the hype, attention, and iteration around e-learning right now?

[
**It's not what you know.**
**It's how you learn.**
]

For starters, our nation has incurred a major financial reset. Families are feeling the costs of higher education more than ever before. Simultaneously, relatively recent major advances in technology—including cloud computing, social media, and smartphones—have fundamentally reshaped how we function. Today's youth consider a kid using technology in the '90s a Luddite. As a result, what was "intellectual exchange" at our colleges and universities ten years ago is now pushing boards to ponder their future.

But this movement is fueled by other, deeper trends. **Seismic and structural shifts**, from the aging of America to the redefinition of work, are demanding that organizations and

individuals reinvent themselves and reimagine their futures. Chronic physical health challenges, mass incarceration, permanent unemployment, and other pressures underlie a growing concern about our **population's readiness to compete** in a 21st-century global economy. **Growing challenges for education**, including lagging achievement in K-12 and skyrocketing tuition costs in higher education, are driving individuals and families to demand better options and to question the return on a college degree. Meanwhile, new and emerging **online tools and technologies** are disrupting educational content and delivery, and **free-form, DIY (do-it-yourself) learning** has already moved education well beyond educational institutions and into our everyday lives.

These ingredients of disruptive innovation, combined with others we cannot yet anticipate, will continue to accelerate the speed of access to high-quality, low-cost educational content to a level we have not seen before.

There is little doubt that e-learning will replace some aspects of traditional education. But despite the predictions of technology futurists, what will happen to our educational institutions is not at all straightforward. Organizations will not simply choose between remaining place-based or putting all their offerings online. Many organizations and institutions will blend e-learning and face-to-face instruction. While some of these efforts will amount to cosmetic tweaks or add-ons, the true innovators will go much further. As Clayton Christensen recently **wrote**, "The lessons from any number of industries teach us that those that truly innovate—fundamentally transforming the model, instead of just incorporating the technology into established methods of operation—will have the final say."

Which institutions live on, which ones disappear, and which ones consolidate—and which educational offerings move online, which remain face-to-face, and which are blended—will depend on several factors:

- **Cost, efficiency, and convenience:** Learners with budget, geographical, family, work, and other life constraints view education as more transactional and are more likely to look to lower-cost, easier-to-access e-learning options.

- **Brand, reputation, and networks:** The prestige of attending select universities and institutions (and the social capital, networks, and connections that go with them) are too strong to be replaced by lower-cost options. But many less-prestigious institutions will change significantly—or wither on the vine.

- **Place and experience:** The more we go high tech, the greater the need for high touch—that is, the emotional and social experience of meeting others in person, in physical places.

- **Structure:** Certain learners, at various stages of life, will continue to need the predictability and oversight that only a physical setting with a set schedule can provide.

Regardless of where organizations or institutions start, it is those that see digital and place-based learning as mutually exclusive that may be in the most trouble.

While institutions navigate these uncertainties, the ground will continue to shift beneath us. Disruption not only changes existing markets (IBIS Capital maps them in this **2013 report**) but also creates new ones. Here are a few of the new opportunities we foresee:

Over the next ten years, we will see, finally, the realization of **"just-in-time learning"**— being able to access information easily and inexpensively at the precise moment of relevance.

We will see many more employers move away from an exclusive focus on "seat time" and credit hours for determining whether candidates are qualified for positions. Employers will give increasing weight to **competency-based assessment and certification**, which offer the promise of faster, more effective career training, job searching, and matching of skills to needs.

As employers seek to leverage e-learning offerings for talent development within their organizations, we will see the mainstreaming of the **"learning concierge"**—content navigation experts who help others find and customize the content they need to learn in order to progress in their careers.

> **Access to a computer does not necessarily mean access to education or learning.**

We will see **"blended learning"** proliferate, as organizations experiment with ways to make their educational offerings more relevant, personalized, and interactive, not just cheaper and more scalable.

In the midst of these radical changes, it's important to keep in mind that access to a computer or mobile technology does not necessarily mean access to education or learning. What matters is the experience that surrounds e-learning and how it's applied. The best technological innovations mean little without performance-driven leaders and managers committed to continuously improving them.

Drawing on the wisdom shared throughout this year-long learning process, we have organized our observations and lessons into five sections. Here is a brief summary of the insights we share in each:

- **Perspectives on the Current State of E-Learning** – E-learning's impact will go far beyond the field of education. Merely putting content online is not enough to improve how we teach and learn.

- **Deciding Factors: What Will Determine How It Gets Applied?** – What will happen to our institutions depends on several key factors, including brand, cost, place, and structure.

- **Key Ingredients: What's Making It Possible?** – Disaggregated content and open source are key ingredients of innovation in e-learning.

- **Value Proposition: Why Incorporate E-Learning?** – It's not just about scale. In addition to introducing the reality of just-in-time learning, e-learning offers the potential of continuous improvement via immediate feedback; personalization via measurement and self-pacing; and new ways of engaging in active learning (or "learning by doing") and learning from peers.

- **Considerations for the Future: Where Are We Headed?** – With radical shifts in accreditation and certification, e-learning has profound potential to change the flow of talent across all sectors.

As you consider these observations, please keep the following caveats in mind:

- Most of the disruptive innovations will continue to come from the periphery, not from established institutions.
- Limited data on performance make it difficult to develop conclusions on the newer innovations.
- Much of the media coverage and analysis of the recent surge in e-learning fails to take into account the extensive experience, lessons learned, and achievements in distance learning and other e-learning models in the federal government and higher education.
- The lack of comprehensive market/area segmentation analysis inadvertently focuses attention on higher education and K-12 at the exclusion of other major markets, largely ignoring the broader potential e-learning offers.

Finally, in the **appendices** at the end of this report, we provide the methodology we used to gain a better understanding of the field, the broad definition of "e-learning" we used in this report, basic ways to think more specifically about applying e-learning (in your own work, within your organization, and externally), and a list of recommended resources.

# Forces at Work

While e-learning has been with us for many years, innovation is occurring at breakneck speed. To begin to understand why, it's essential to recognize the forces and pressures driving organizations to rethink their relevance, role, and model, including:

## 1 Seismic changes and structural shifts

Our nation and economy have been undergoing massive shifts for decades as a result of globalization and the adoption of new technologies. The financial system implosion and Great Recession accelerated these structural changes on multiple fronts. When you add in the impact of the aging of the American population, huge debts and deficits, shifting ethnic and racial demographics, climate change, the costs of combating terrorism, and dramatic changes in the workplace, you can appreciate why we describe these shifts as "seismic." But whatever term you use to describe these massive changes, it is clear that organizations of all types must be willing to face them head on, look at their potential impact on the organization's mission, and adapt or reinvent themselves accordingly.

Dramatic advances in information technology and communication (IT&C) are both driving the need for reinvention and serving as a means by which to facilitate it. IT&C has made the world more interconnected and interdependent than we can fully comprehend. Open source, cloud computing, and mobility converge on the Internet over high-bandwidth telecommunications piping and telephony to make possible access, speed, agility, and adaptability of a magnitude materially different from that of any previous era. They are liberating us from our time-bound or place-restricted past.

## 2 A growing concern with the readiness of our population

The impact of poor educational achievement in K-12, chronic physical health challenges (from obesity to asthma to diabetes), mass incarceration, drug abuse, and a growing class of permanently unemployed is driven home in the report *Ready, Willing and Unable to Serve* from the nonprofit organization Mission: Readiness. The report finds that 75% of young people aged 17 to 24 are unable to enlist in the military because they fail to graduate from high school, have a criminal record, or are physically unfit for service.

## 3 Growing challenges for education in America

*Education Week* **reports** that while high school graduation rates have gradually increased (the latest figures have us at the highest point since the 1970s), nearly one million students are dropping out. According to **data** from the Organization for Economic Cooperation and Development (OECD), in the decades since World War II the United States has fallen from number 1 to number 22 among industrialized countries in the rate of high school graduations. OECD's latest Program for International Student Assessment (PISA) **results** further indicate

that educational achievement and outcomes of high school students in reading, science, and mathematics are average at best. At the same time, college graduation rates recently reached a **new high,** but we still **lag internationally** and low-income students are dramatically less likely to enroll in and graduate from college than more affluent students. More recently, increasing tuition costs, the impact of more than $1 trillion in student loan debt, the disconnect between degrees and careers for many graduates, the acute shortage of talent sought by employers, and challenges inherent in training people to learn new skills have brought into question the value proposition of the college degree, making higher education—or at least key segments of it— ripe for disruptive change.

## 4 Disruptive changes in educational content, delivery, and learning

Despite the prevalence of inflated claims, there is no question that new and emerging online tools will produce profound changes in how people access and transfer knowledge. Owing to increased bandwidth, technological innovations, and the positive externality of networks (becoming more useful as more people join), online educational content will be:

- Disaggregated into modular, discrete, and digestible units or "learning nuggets";
- Relatively inexpensive or even free;
- Findable via sophisticated search and navigation systems;
- Anywhere, anytime, and accessible in multiple ways through cloud computing, netbooks, tablets, smartphones, and even wearable devices such as **Google Glass**;
- Personalized, self-paced, and adapted for different learning styles and needs;
- Social and participatory, fueling group-based learning and drawing on the wisdom of the crowd;
- Available via open systems with interoperable and portable protocols (e.g., videos and exercises can be reused, remixed, and/or repurposed in unlimited ways);
- Continuously improved as a result of real-time feedback; and
- A legitimate pathway to earn competency-based credentials with market value.

## 5 The emergence of free-form learning

Enabled by the Internet and digital literacy, DIY learning is flourishing outside of major institutions. True to the theme that innovation comes from the periphery rather than the core of an industry or sector, untold numbers of e-learning offerings are popping up outside of the mainstream of education and business. Just consider these few as indicative of a much broader wave: **The Landmark Forum**, for life coaching; **CodeAcademy**, to learn how to code; **Feast**, for cooking lessons; and **WebMD on YouTube**, for learning a range of exercise and fitness techniques. Learning consumers—especially young people for whom digital environments are second nature—are in the driver's seat. And in our knowledge-driven economy, those who know how to fill knowledge gaps by themselves and skillfully curate content for others are in increasing demand.

# Key Observations and Lessons

As we considered the current rate of technological innovation in e-learning, we tried to do so within the historical context of the evolution of online education and other disruptive innovations. To help distill our thinking about the state of e-learning, its implications and potential, we organized our views into five categories:

- **Perspectives on the Curent State of E-Learning**
- **Deciding Factors: What Will Determine How E-Learning Gets Applied?**
- **Key Ingredients: What's Making It Possible?**
- **Value Proposition: Why Incorporate E-learning?**
- **Considerations for the Future: Where Are We Headed?**

## Perspectives on the Current State of E-Learning

### It's Not Just About Education

Assessing the emergence of e-learning only through the lens of education misses the point. Consider, for example, the sheer size of the corporate training market. According to the **annual industry report** of the American Society for Training and Development, U.S. organizations spent $156 billion on employee learning in 2011. **Trainingindustry.com** estimated the global corporate training market at $287 billion. In addition to education and corporate training, e-learning markets already include professional development, continuing education, consumer education, pleasure and hobby learning, and DIY. We can only guess at the applications that will come next.

> ### 💡 Lesson
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> E-learning will play a role in changing how we transfer and access knowledge in all aspects of life, and, in turn, how we learn and continuously adapt how we learn. It is through this lens that a vivid picture emerges of the potential impact of e-learning on how individuals, organizations, and networks operate and interact—individual to individual, individual to organization, and organization to organization.

### Evolutionary, Not Revolutionary

As so many veterans and experts reminded us, e-learning in its broadest context (i.e., distance learning) is not new. Even in the dramatically titled report *An Avalanche Is Coming: Higher Education and the Revolution Ahead*, education giant Pearson acknowledges that "the Open University in the UK is an age-old example of learning that has happened away from a university campus, and the Allama Iqbal Open University in Pakistan has been providing

courses for the masses via television for decades." The more moderately titled infographic **"The Evolution of Online Learning Technologies"** from Rasmussen College traces distance learning back to a correspondence course in 1728. Echoing the mood of today, Thomas Edison declared in 1913 that the school system would be "completely changed" by the introduction of film in the decade ahead.

Whether you call it e-learning, distance learning, networked learning, social learning, or connected learning, it's been with us for years in various forms and iterations. We yearn for the day in which we don't have to put a prefix or adjective in front of "learning." We know we're not there yet, but we are encouraged by the **recent observation** of learning guru Elliott Masie that those who have been developing e-learning courses and trainings for decades, including in the military and intelligence community, are indeed beginning to just call it "learning."

## Lesson

To better understand the implications of e-learning, keep the historical perspective in mind. Take the time to learn from the experiences of others and understand how e-learning fits into the broader evolution of technology-enabled learning. Technology futurists are almost always wrong as they forecast the future in logical terms, forgetting that "life happens" when people get involved.

## Going Online Is Not Enough

All over America, schoolteachers now use PowerPoint or Smart Boards to present the same lessons that they or their predecessors previously shared on a whiteboard, blackboard, or transparency. If they don't enhance the content to take advantage of the new medium, that's a huge missed opportunity. Similarly, in the world of e-learning, just putting content online doesn't change anything. For instance, how many Massively Open Online Courses (MOOCs) have done nothing more than videotape a professor's lecture? Granted, more people can access the course if it's delivered online. But was the lecture good to begin with, and how, if at all, was it made better?

*"A general rule of thumb is that people absorb more technological change in the long term, and less in the short term, than they currently expect. . . . We can expect E-learning to have dramatic long-term effects on how people learn continuously, and just-in-time, over their lives. But we won't see an immediate change-over."*

**—Jim Reid, formerly of SAIC**

Bruce Guile of Course Gateway, which helps institutions take advantage of new educational technologies, makes the case that e-learning tools and approaches have so far "augmented" rather than fundamentally changed "learning (individual acquiring knowledge) and personal teaching (exercise of inspiring/helping others to learn)." Gregory A. Jackson, vice president at EDUCAUSE, **argues** that if information technologies are to make higher education better, and not just more efficient, we must "exploit opportunities and address problems." Based on what we have observed, institutions must redo their courses and curricula to take advantage of the speed, access, and interactivity that the online medium offers. **Dr. Carol Twigg's work** with 30 colleges and universities demonstrated that technology can improve learning outcomes and reduce costs— but only if instructional approaches are redesigned to best suit the medium in which they are delivered.

MOOC pioneer George Siemens recently **noted** that as universities move "from the hype to the implementation," they are waking up to this reality. "Now that we have the technology to teach 100,000 students online," he said, "the next challenge will be scaling creativity, and finding a way that even in a class of 100,000, adaptive learning can give each student a personal experience."

## Lesson

It's not the online medium itself that has the potential to improve teaching or learning; it's the application of the medium. Just as we learned in the '90s with the advent of the Internet, we still need good content, delivered effectively.

*"It's also important to note that it's not just about having any online platform, but an online platform that has the right capabilities and features to support the kind of teaching that you want to take place on it. There's still a long way to go for that, and even aside from the content, what we see on the online learning platforms of today will be very different from what we'll see several years in the future."*

**—Pang Wei Koh, Coursera**

# Deciding Factors: What Will Determine How E-Learning Gets Applied?

## Brand vs. Cost

Much has been made of the potential impact of e-learning and MOOCs on the future of higher education. Many predict, or fear, that once students are faced with the choice between earning a degree on campus in four or five years at a cost of **$22,000 to $43,000 per year** and getting a degree from a respected institution online at a fraction of the cost (Georgia Tech is already offering a **master's degree in computer science** in partnership with Udacity for $6,600), it will be game over for most colleges and universities.

As Harvard Business School professor Clayton Christensen, a leading authority on disruptive innovation, **notes**, "For the vast majority of traditional universities, if the prices fall by 10% they are bankrupt; they have no wriggle room." Consistent with how innovation theory has played out in other industries, Christensen **predicts** that "existing consumers will ultimately adopt the disruption and a host of struggling colleges and universities—the bottom 25 percent of every tier . . . will disappear or merge in the next 10 to 15 years."

The prestige and campus experience of attending a Stanford or Harvard, in Palo Alto or Cambridge, cannot be replaced; the brands of these universities—and the networks that go with them—are too strong. But the toll on less esteemed schools will be at least damaging and maybe catastrophic. If students can get the same degree for the same price from one institution online that has a more prestigious brand, top professors, and a high-quality learning experience, they will go there rather than to a lower-quality, in-person education provider. This holds for all levels of training and education. If Paul Mitchell is willing to teach a hairstyling class online, why go to the local beauty school?

> **"For the vast majority of traditional universities, if the prices fall by 10% they are bankrupt."**

The combination of brand and cost will likely be determining factors for students, but ultimately it may be employers who play the key role. How will an employer value the student who lived the campus experience at Stanford and spent upward of $240,000 to earn her B.A. versus the student who earned that Stanford B.A. online for about $50,000? Or better, how will that employer value the person who bypasses the degree altogether and gains her subject mastery through a self-personalized learning curriculum?

Less prestigious educational institutions will not be able to adapt quickly enough to the lower tuition revenues or the demands for higher quality. Some will continue as shells of what they once were, while others will face reinvention, bankruptcy, restructuring, or consolidation.

This does not mean that fewer students will seek advanced degrees. *The Economist* recently **reported** the prediction of Udacity founder Sebastian Thrun that MOOCs will create a "tenfold increase in the market for higher education . . . similar in magnitude to what the creation of cinema did to demand for staged fiction." E-learning will result in more people seeking degrees, certifications, and lifelong learning. Time will tell whether this explosive growth occurs in higher education, in the corporate world, or in venues we don't yet know.

## Lesson

While certain learners will continue to opt for face-to-face instruction, many will choose lower-cost education offered via e-learning. Because disruption opens new markets, learners will be in the driver's seat with more options than ever. But it may be employers who serve as the ultimate arbiter.

## Importance of Place, Proximity, and Experience

Before we conclude that e-learning will replace or supplant current forms of education and training, it is important to reflect on what history shows. In his seminal book *Megatrends,* published in 1982, John Naisbitt was remarkably on point with his premise that the more we go high tech, the more we need "high touch." In other words, as our dependence on technology grows, our need to convene and connect grows with it.

[ **Almost 20 years after video on demand was invented, people still like going to movie theaters.** ]

Along these lines, in 1995 there was a great **debate** between futurist George Gilder and management guru and author Tom Peters on the importance of place in the evolving digital, networked society. Gilder maintained that robust network connectivity would allow and encourage people to move to rural areas, leaving our cities mere hollowed-out shells of civilization. Peters, on the other hand, believed that cities would not only continue but prosper and thrive. He thought that people would want to live in vibrant communities teeming with personal connection and activity. Peters was right: place matters. Almost 20 years after video on demand was invented, people still like going to movie theaters. E-commerce has been a great success, but in-person retail shopping remains strong and vibrant; only **5% of the retailing dollar goes to e-retailers**.

Educators are right to emphasize the importance of the holistic experience that brick-and-mortar schools provide. Practical custodial concerns are also relevant. As Steve Seleznow, president and CEO of the Arizona Community Foundation, put it, "If I can effectively deliver

. . . content to students 24/7, wherever they can connect to it, and they don't need to come to school to take it . . . what do we do with the thousands of 14- to 18-year-olds every day from 7:30 to 3:30 in communities all across the country/globe?"

The reality is that both digital and place-based learning have roles. For some learners, place and experience are central. For others, as Clayton Christensen and Henry Eyring explain in *The Innovative University,* the experience of place is not as central because of family, work, financial, geographical, or physical limitations. For this second group, e-learning has the potential to make a profound impact. For the first group, experience will continue to trump feasibility and convenience. This is not to say, of course, that e-learning will not be a part of their lives. Education will be online, place-based, and blended.

## 💡 Lesson

E-learning will no doubt replace certain segments of our education and training sectors, but there are aspects of education as we know it that will endure. In much the same way as globalization (when done right) introduced the value of separating knowledge-based and proximity-based functions to determine what could be constructively outsourced, we may want to separate the aspects of education and learning that are tied to the "experience of place" or the "experience of relationship" from those having to do with efficiency, necessity,

## Need for Structure

Before we accept e-learning as the answer for any learner constrained by financial or physical limitations, we must consider the ways in which e-learning may fall short in meeting demographic challenges. In the case of MOOCs, touted as the great equalizer in education, researchers have **found** that, so far, most MOOC students are "already well educated . . . young men looking for new skills to advance their careers." For students who attended college, watching lectures and completing assignments on time week after week is a familiar task. For those who did not, it's less familiar and, at least so far, less appealing.

> **Most MOOC students are young, male, and already well educated.**

While some learners may prefer place-based experiences, others require it. Emotionally troubled children and young adults, for instance, present a different set of issues and require relentless supervision, counseling, and coaching. Although e-learning could provide an important supplemental part of their structured learning, the expectation that it could replace

the face-to-face experience for such students seems "incomprehensibly naïve," as writer and teacher Ellie Herman **recently commented** on her blog. Similarly, an important factor for students with learning differences (from difficulty with basic reading and language to ADHD or Asperger's syndrome) is having structure in their day. Watching short online videos that can be stopped and started, answering frequent comprehension questions, and participating in online forums can be **particularly valuable** for students who are unable to sit still in a classroom, who digest information differently, or who find it difficult to respond in front of their peers. But without a parent or teacher to bring them to the task and keep them engaged, e-learning will do them little good.

> **The expectation that e-learning could replace the face-to-face experience for emotionally troubled kids seems "incomprehensibly naïve."**

Online courses may be a mismatch for older learners as well. Seniors seek out lifelong learning opportunities to get "out and about" and connect with others, and also to give structure to their week. Online courses don't allow them to meet either of those needs. To take one example, the **Osher Lifelong Learning Institute** offers noncredit classes for "seasoned" adults over the age of 50 at nearly 120 universities across the nation. While many of these courses could be taught online, Osher grants are only available for classes taught face-to-face, in real time.

## Lesson

While a pure e-learning experience can be liberating for some learners, for others it can be isolating or debilitating. Despite the ongoing pressures of cost that will inevitably cause some aspects of brick-and-mortar education to be replaced, certain students at various stages of life will continue to need the structure that only a physical setting with a set schedule can provide. It is in this context and others that e-learning should be viewed not as a replacement but as a supplement.

# Key Ingredients: What's Making It Possible?

## Disaggregation and Remixable Content

Analysts and experts we consulted almost universally praised the **Khan Academy** model, which features learning curricula made up of short, modular, easily accessible videos and exercises, available to anyone where they are, when they need them, for what they need, multiple times, and at no cost. Instead of long lectures, Sal Khan and other Khan Academy instructors break down lessons into learning sequences along a **knowledge map** that students can follow to build mastery of any subject.

But the real power of disaggregation, or chunking, rests in its potential for remixing and revising content. In **edX101**, a course about how to create a course, Clayton Hainsworth, operation and production manager at edX, advises creating short segments, three to seven minutes long, to give yourself "the opportunity to think about your content in a way that is extremely modular and extremely succinct." It is in this way that chunking content introduces the possibility of remixing at every level. Just consider that on SlideShare alone there are more than **ten million presentations** available for remixing and repurposing. On YouTube, **100 hours of video are uploaded every minute**.

It's important to note that as learning becomes increasingly disaggregated, learning maps and guides, such as academic disciplines and curricula, will became more, not less, important. As Bruce Guile of Course Gateway reminded us, these pedagogical structures "exist because humans need them to navigate the vast store of accumulated human knowledge." Not everything is a quick hitter. Even just-in-time learning chunks can be part of a pedagogical sequence that conveys a bigger picture.

> ### 💡 Lesson
>
> Chunking content introduces the possibility of reshaping how we develop, enrich, remix, and repurpose educational content—from courses to illustrations to quizzes—at every level. Realize that you are already creating content every day. All you need to do is capture it—what you and your staff do, teach, and learn. By capturing everything from written procedures to videos to charts, you will develop a repository of bite-size chunks of knowledge that can be pulled together and edited into tailored educational content for your organization.

## Open Systems Rule

Experts we spoke to repeatedly emphasized the importance of content being not just free and digestible but open and reusable. Despite the use of the word "open" in the term Massively Open Online Course, most of the popular MOOC platforms today do not allow for the reuse of content by anyone outside the university or institution that created it (nor are there robust

technical interfaces to share content). However, there is a vibrant movement to organize and make available content that is generally free of license restrictions. So-called **open educational resources** (OER) can be reused, remixed, and redistributed anywhere. Tools that allow users to integrate and remix content from across platforms, such as **OERPUB**, have also emerged.

A close cousin to OER and other liberal copyright content systems are "open-source" platforms such as edX, where the underlying computer code is shareable and reusable. (It is also worth noting that edX released its code to developers in 2013, and Google has recently suspended its own open-source effort, Course Builder, to create **Open edX**.) Consistent with Clayton Christensen's model for disruptive innovation, this emergence of open source in educational content development has put a firm **cap on the growth of proprietary** Learning Management Systems (LMS) platforms.

While the societal impact of crowd-sourced open content has already been profound (just think of Wikipedia), we are witnessing its growing impact on higher education, and to a lesser extent K-12, where teachers are sharing materials online and creating lesson plans by drawing on the resources of others. Why start from scratch or reinvent the wheel? **OpenEd** boasts more than a million common core videos, games, and assessments. Educators, and anyone else, can access content from federal agencies and national organizations like NASA, the Library of Congress and PBS through the **Learning Registry**. More than 260,000 of the nation's three million teachers use the **Teaching Channel** to share ideas, while others use **LearnZillion**, **Share My Lesson**, **Better Lesson**, **Edutopia**, or **ePals**, which connects approximately one million classrooms worldwide. And who knows how many of them are using iTunes U, the **"Amazon for online higher ed,"** in ways none of us would have ever foreseen?

People are applying open-source-inspired models for content well beyond education to solve tangible problems, big and small. To cite just one example, **Marcin Jakubowski**, a farmer and technologist, is open-sourcing the blueprints for 50 farm machines, making it feasible for farmers without an engineering background to build their own tractors from scratch at a much lower cost than buying one from John Deere. Creative Commons celebrates significant examples that have impacted art and culture around the world in its **video-based annual report**.

## 💡 Lesson

You don't have to start from scratch. An enormous amount of e-learning content is readily available. Open educational resources and freely licensed content should be seen as an opportunity to materially leverage one's assets rather than a proprietary threat. Unless your intellectual property provides a true competitive advantage, you will see much greater returns on your work by sharing your knowledge and benefiting from the collective intelligence of an open-source community in which you participate and to which you contribute.

# Value Proposition: Why Incorporate E-Learning?

## Just-in-Time Learning

As GSV Advisors observed in its **American Revolution 2.0** report, the cost of computing power and data storage is approaching zero (storing 1 GB of data cost nearly $1 million in 1980; today, it costs just a few cents). You can look up a YouTube video on how to change a tire from your smartphone when you have a flat on the interstate, for free, in seconds. You can find a recipe for a gluten-free version of the meal you were planning the moment you discover a dinner guest's dietary limitations. These kinds of just-in-time resources have huge implications for training and learning in the workplace. Bulky, expensive, quickly outdated manuals are no longer needed. Courses and how-to videos are already available on almost any topic. The further these resources are disaggregated, the greater their potential to be reused, remixed, and continuously improved to enhance the learning and training experience, precisely at the time of need.

### 💡 Lesson

When resources are quickly and cheaply available, we use them. Ease of use and speed tap latent demand, which leads to increased productivity. In the same way you look up a restaurant on Yelp or a movie on Fandango, imagine a caseworker for a social-sector-organization looking up a tailored resource for dealing with a specific drug issue at the moment of need, any time of day or night. E-learning extends the reach of just-in-time learning.

## Continuous Improvement

One aspect of e-learning has the potential more than any other to introduce the concept of continuous improvement into teaching and the learning process: real-time feedback made possible by social media (or learning networks) and digital assessment.

In one example we heard, an instructor who presented course material in short videos used a wiki for students to interact with each other, enabling them to ask questions about the material, explain points further, and so on. The instructor monitored the wiki activity and mostly just gave students enough time to resolve questions themselves. In one exchange, however, the instructor observed that everyone was having difficulty with the same material, and he realized that the problem lay in how he had presented it. He reshot the video and let the students know he had posted a new one. This was done in a matter of days.

The Khan Academy conducts A/B tests with its exercises to see if things like question wording or the color of a headline have an impact on whether students answer questions correctly. With over nine million students per month, Khan's sample sizes are large enough to provide meaningful data, and developers can adjust exercises to improve comprehension and performance instantly.

At an even broader scale, e-learning has the potential to provide tremendous amounts of fine-grained data, or "big data," that institutions and instructors can use to understand and address the diverse learning styles of their students. In a **recent report**, the New Media Consortium points to applications of big data and learning analytics that "get to the heart of student retention and achievement by interacting with the student directly and continuously. Examples include a digital textbook company that provides student engagement scores that help instructors assess the effectiveness of their reading assignments, and software that "incorporates data from student information systems, course management systems, and course grade books to generate risk levels so that at-risk students can be targeted for outreach."

## ☀ Lesson

There are many different ways to collect user feedback, including social media, wikis, other forms of digital communication, and immediate quantitative assessment. But it's not the technology that matters. What matters is how instructors and learners, as well as developers, producers, and all those involved in the learning process, apply the information (both quantitative and qualitative) that technology now makes more readily available. Continuous improvement should become an expectation for all aspects of the learning process.

## Personalization

Teachers and schools have experimented with ways of personalizing the classroom experience for years. Yet in a typically structured classroom, where an instructor teaches a single lesson to all students at the same time, students who learn more slowly typically fall further behind and stay there. E-learning introduces a new degree to which both teachers and managers and learners can control the pace of the learning process. Khan Academy founder Sal Khan **points out** that learners are often self-conscious about asking too many questions or needing a concept explained multiple times. When content is disaggregated and freely available to anyone anywhere, people who learn differently can go at their own pace. Khan Academy data shows that, over time, the learners who start slower are able to catch up.

Adaptive learning technology analyzes learners' progress in real time and adapts content to their individual needs as they go. GSV Advisors' **American Revolution 2.0** report compares the potential of adaptive technology to Pandora, the online service that tailors music selections to each listener's taste: "Imagine a learning network that gets smarter with each click. . . .

Being able to know exactly where a student is and dynamically creating a learning experience that optimizes the time spent can be transformational." That vision may not be so far from reality. The adaptive learning startup Knewton has **signed deals** with the biggest publishers in education to bring its predictive analytics and personalized recommendations to millions of students around the world.

> ### 💡 Lesson
>
> MOOCs that require hundreds, or even thousands, of students to progress through the same exact content on a tightly constrained weekly schedule are not providing a personalized learning experience. E-learning, done right, can make the learning experience more personalized—opening up new possibilities for the students, or other people you serve, who learn differently.

## Active Learning

According to the 70-20-10 model, 70% of workplace learning occurs from on-the-job experiences; 20% through peers, coaches, and mentors; and only 10% from formal classroom training. Learning producers are finding new applications for **project-based learning**, which instructors have used for years as a way of getting students to "learn by doing." In Udacity's Introduction to Computer Science course, students **build search engines**. In the Finance of Retirement and Pensions course offered by **Stanford's NovoEd**, students analyze a state or local pension plan and propose reforms to make it stronger.

Our Armed Forces have used virtual simulators for years to train military personnel for combat, and budget cuts will drive increasing use. By incorporating game-based learning (**"serious games"**) and simulations into military training, members are able to experience things they could not otherwise. *Military Training Technology Magazine* recently reported that virtual simulation training "has advanced so much that users may experience things that were never possible during on-the-job training. For instance . . . emergency landings." Likewise, medical institutions are using the latest technology to create simulations of emergency medical procedures, and companies like 3D PreMotorSkill Technologies are using simulation for retraining survivors of traumatic brain injury.

> ### 💡 Lesson
>
> When we experience something for ourselves, we understand and remember it better. E-learning should employ resources for active learning, including project-based learning, serious games, and simulations to increase learning retention.

## Peer Learning

Decades ago, computer networks illustrated the value of peer learning. The emergence of the Internet sent peer learning into hyperdrive, and e-learning is benefiting today. Learners, especially young learners steeped in social media, are using social networks (or "learning networks") to learn from each other in both structured and informal ways. Just as students have always gathered in libraries to study in groups (and will continue to do so as **modern libraries evolve**), they are using Facebook, Twitter, and other platforms to help each other with homework, prepare for tests, and share notes and thinking. They are also using social media sites to find fellow students and plan times to meet in person, whether for a study group or a party.

Institutions are following their lead. **Udacity** and **Coursera** run **Meetup** sites to facilitate such gatherings. **Pinterest** just launched a dedicated site to support teachers who are using the platform to share thousands of creative ideas each day. **+Acumen** requires students to sign up with at least one other person and join a lab or group, and there are no formal instructors or facilitators. At **P2P University**, anyone can teach a course and people learn topics by working together, assessing one another's work, and providing feedback. Howard Rheingold's 2012 **"Peeragogy Handbook"** is a practical how-to for learners who want to work together online to organize courses, without an instructor. As Beth Kanter, author and social media guru, **explains**, "Peer learning acknowledges that everyone in the group has expertise and experience to share."

### 💡 Lesson

We learn best by teaching what we have learned and interacting with others to share ideas and work through problems. Imagine teachers, social workers, nonprofit leaders, and managers in different parts of the country sharing advice and learning new skills from each other in real time. E-learning opens up incredible potential for peer learning's broad-based adoption.

*"Good curation skills can build staff expertise and avoid the pain of information overload. . . . Curation is all about helping your audience dive in and make sense of a specific topic, issue, event, or news story. It is about collecting, but it is also about explaining, illustrating, bringing in different points of view and updating the view as it changes."*

**—Beth Kanter, author and social media guru, "The Unanticipated Benefits of Content Curation"**

# Considerations for the Future: Where Are We Headed?

## Competency-Based Assessment and Move to Certification

The Carnegie Foundation's recent **scrutiny** of the credit hour (which it created in 1906) and the U.S. Department of Education's decision to **green-light** federal aid to college students enrolled in "competency-based" programs bolster the potential for e-learning to play a significant role in how we assess and verify what someone has learned and the skills at which he or she excels. As *Inside Higher Ed* **reports**, competency-based programs are "typically online and allow students to progress at their own pace without formal course material. They can earn credit by successfully completing assessments that prove their mastery in predetermined competencies or tasks—maybe writing in a business setting or using a spreadsheet to perform calculations." Some critics **express concern** that competency-based learning will undermine college as a holistic, well-rounded learning experience where students develop many essential but unquantifiable soft skills. These are legitimate concerns. But ultimately, we believe your ability to certify what you know and how you learn will count for at least as much as, if not more than, how much time you've spent learning or the number of credit hours you've earned.

Employers must drive this shift. A few years ago, while having dinner with a leading executive in the tech industry, one thought leader we consulted asked, "You have very traditional and strong academic credentials with degrees from prestigious universities, how critical are traditional academic credentials to your hiring decision? What do you value most in hiring employees?" The executive responded, "Most important is what the prospective employees have done. Second is what they have done that reveals what they know." As Charles Murray, co-author of *The Bell Curve*, **mused**, "Walk into Microsoft or Google with evidence that you're a brilliant hacker, and the job interviewer is not going to fret if you lack a college transcript."

> **"Walk into Microsoft or Google with evidence that you're a brilliant hacker, and the job interviewer is not going to fret if you lack a college transcript."**

With the September 2013 launch of **Open Education Alliance**, Udacity is making this new approach a reality, partnering with employers to prepare students for the tech jobs they need to fill. Meanwhile, Yahoo is **paying for** its employees to earn verified certificates in new tech skills through Coursera. Other companies and government agencies have their own online universities to instill in their employees the institutional values and specific skills that their jobs require, whether handling a difficult customer at a Jiffy Lube service center (see "A Day in the Life of a Store Manager" simulation at **Jiffy Lube University**) or developing performance

requirements for service acquisitions at **Defense Acquisition University**. In November 2013, Tenaris, the world's leading global manufacturer and supplier of steel, **announced** that it would adopt the edX platform to enhance the training programs it provides through Tenaris University for nearly 27,000 employees worldwide.

In a sign of how quickly employers and job seekers are embracing and legitimizing online certifications, you can now—as of November 2013—**seamlessly post** certifications earned through the premier online course providers directly into your LinkedIn professional profile. Yet as Erv Blythe, Vice President Emeritus for Information Technology at Virginia Tech, told us, "Relative to a transformed higher education process, the critical element of a student's credentials will be an e-portfolio of papers, projects, and teacher and peer evaluations showing and supporting what that student has done, not a transcript of courses and grades."

## Lesson

E-learning is already beginning to fundamentally alter how individuals develop skills for workplace readiness and could do the same for how organizations in all sectors develop, attract, and retain talent. Certifications tailored to specific competencies, values, and skillsets could help result in a workforce more supported, prepared, and equipped to meet the complicated and varied needs of the customers and constituencies they serve.

### Free Agent Markets and Talent Recruitment

According to IBIS Capital's *Global E-learning Investment Review*, "65% of today's grade school children in the US will end up at jobs that haven't been invented yet." Technology will not only continue to create a new breed of work opportunities but increasingly fuel the growth in "free agents"—individuals who are not employed or incorporated but who job-shop and contract their services. Those "buying" services and those "selling" them will be able to find what they need more quickly, easily, and accurately, at a more granular level.

*"E-learning addresses two emerging societal issues in America. First, automation is permanently eliminating many manual, rote jobs once done by humans. . . . So our ability to train and retrain individuals throughout their careers is vital if we want to avoid long-term unemployment. Second, the pace of change in technology quickly renders individuals obsolete. Yesterday's 'C' programmers are today's Java developers. Yesterday's Oracle database architects are today's Hadoop designers. So anyone who is not continuously refreshing and expanding her/his technical skills is losing ground. . . . Learning how to learn is a vital life skill in the 2000s."*

*—Jim Reid, formerly of SAIC*

**Brazen Careerist**, founded by the job search guru **Penelope Trunk**, is an online network that uses LinkedIn, Facebook, Twitter, and virtual events to help employers and job seekers engage in conversation rather than just rely on job applications. In contrast, *Businessweek* recently **reported** that **Gigwalk** "uses what it calls its 'Moneyball engine'" to help businesses find capable and reliable temporary workers "without ever engaging in personal interactions." Meanwhile, for the one in five Americans who need to master core digital literacy before entering the digital marketplace, **JobScout** helps learners **"master URL before they get to HTML."** And **Catchafire** connects talented individuals to meaningful pro bono experiences at organizations that need additional capacity.

## Lesson

E-learning has the potential to enhance the flow of talent to opportunity. Imagine tapping into larger, more diverse, and more uniquely qualified pools of talent than you've ever been able to reach before. As individuals market their skills and talents (verified via competency-based certifications), and as certifying institutions make access available to their talent pools, the digital certifications that e-learning makes possible introduce new opportunities for organizations to find people with the requisite skills necessary to meet their missions.

The e-learning revolution did not occur overnight and will continue to evolve unpredictably over time. But if you buy into the premise that e-learning has the potential to change the way we learn and adapt and accept Dhiraj C. Rajaram's forecast that "how you learn and how fast you can adapt how you learn" will trump what you know, start asking yourself sooner rather than later: How will e-learning figure into your agenda? How will e-learning change the way you, your staff, and the people you serve, learn and adapt over time?

*Ponder this challenge. Nobel Prize–winning psychologist Daniel Kahneman's research supported the thesis that an individual's capacity for analytic thinking is a rapidly exhausted reservoir. Given our limitations, Arnie Milstein, director of the Clinical Excellence Research Center (CERC) at Stanford University, observes: "Helpful learning experiences would maximize individuals' ability to recognize problems worthy of their limited analytic reservoir and whether their currently accessible reservoir contains the right stuff—or needs a boost from a human or automated (HAL or Jiminy Cricket) knowledge concierge."*

# Ways to Get Started

While we hope this report leads to a better understanding of the applicability and potential of e-learning in general, the considerations below offer specific ways to think about applying e-learning—individually, within your organization, and for your external audiences. In each case, e-learning can supplement your *existing* competencies or be used to develop entirely *new* skills and services. But remember, a digital device won't improve learning by itself, and it could just get in the way. It's not the online medium itself that has the potential to elevate learning; it's how you use it to engage more deeply, enhance creativity and collaboration, and continuously improve.

## Individually: Engage Deeper, Continuously

Taken together, e-learning innovations have passed a threshold that extends beyond previous individual learning opportunities. The speed at which you can access learning is now faster. The scope of educational offerings is broader. And increasingly, the education you can receive via online lectures, discussions, and simulations—with rich opportunities to engage with subject-matter experts and peers—is *deeper*. To get started:

**1 Start Small, Stay Focused, But Open**

As one thought leader put it, "Learn a little, try it and experience it, reflect on what you observed, and cement the learning for real-world application. . . . Focused e-learning in specific areas is likely to be a better solution for busy leaders who are both flying the plane and learning to fly at the same time."

New portal sites such as **Learn Big, SkilledUp**, **Noodle**, and **Knollop** can be helpful for accessing and navigating e-learning content (ranging from Khan Academy lessons to courses provided through **Coursera**, **edX**, **Udacity**, **Udemy**, and **MIT OpenCourseWare** to professional training via **Lynda**). Some navigation sites even provide user ratings and reviews. But be prepared to sift through a lot of content, try things, and keep track of providers and instructors that suit you. If you are a nonprofit leader, you may want to check out the **Gift of Learning** program from the Cornerstone on Demand Foundation, which provides nonprofits with access to e-learning resources at no cost.

**2 Learn from Millennials**

Look to students and young people as technology guides and teachers. Advances over the past half-decade in cloud computing, social media, search, video, smartphones, and tablets have fundamentally reshaped how we function. When aggregated, they make for a different

world. While later adopters can help us understand the challenges these new technologies pose, younger millennials possess creative, integrative mindsets that can help the rest of us see what's possible.

We have a young colleague teaching us new ways to build websites and a young digital graphics designer showing us new ways to visualize information. By making them part of our core team and giving them license to tie disparate functions together, we have seen the quality of how we present our content improve.

## 3 Use More Video

We can do a lot with video using smartphones, iPads, and other mobile devices, but consider investing in a decent video camera and webcam (learning guru Elliott Masie **recommends this one**). *McKinsey Quarterly* recently **reported**: "As video communication rises in importance, effective leadership will increasingly require the kind of creative skills we know from the world of 'auteur' filmmaking—an authentic voice, imagination, and the ability to craft compelling stories and to turn them into media products that make people take note and 'lean forward.'"

Video is not always the right medium, but it is playing an ever-increasing role in many aspects of our lives (now accounting for **53% of all Internet traffic** in North America) and organizations. As just two examples of this increased focus, consider the recent announcement of the third annual **Video Experience Conference** and the success of the **Nine Academy**, a sophisticated video-learning lab that offers training in digital storytelling to organizations and individuals.

For advice on how to create engaging video content, we suggest logging on to **edX101: How to Create an edX Course** and going straight to the "Producing Videos" section for guidance from the head of edX's media department and Sal Khan. If you'd like to try on-screen recording or remixing content, here are two free tools: **Screencast-o-matic** (the easiest free tool out there for screen recording and voiceovers) and **OERPUB** (a free publishing tool that allows you to bring together all the content you want, edit and adapt, and publish in a unified format).

## Within Your Organization: Optimize and Innovate

Over time, changes in technology have made it less costly and more feasible to codify, demonstrate, and share best practices among busy staff members across locations. Today's e-learning offers to further simplify and greatly improve many of these processes—from capture to presentation to participation. More important, e-learning can extend the learning conversation from one-way to two-way (indeed multiple-way).  The traditional approach of documenting and distributing information too often results in static content that quickly

becomes outdated. E-learning enables continuous improvement via an ongoing exchange of views, data, and information that can be tracked, analyzed, and adjusted. A few ways to get started:

# 1 Put E-Learning on Your Agenda

If you buy into the premise that e-learning has the potential to change the way we transfer and access knowledge and, in turn, how we learn, and if you believe that how one learns and adapts will be key to most work, then consider putting e-learning on your organizational agenda. You might set up a "choreographed" session consisting of a dozen or so compelling and innovative examples of ways in which people are using e-learning for knowledge transfer and delivery. (In addition to examples offered throughout this report, you may also want to check out **Udemy for Organizations**, which allows businesses and organizations to create customized learning libraries and courses of their own for internal use.)

Mario did something similar in the mid-'90s when he and his team walked leaders from a child-advocacy organization through a series of websites to illustrate how the Internet was changing the face of politics and organizing in America. One leader shook her head and exclaimed, "I'm not sure whether to cry as I realize how far we are falling behind or celebrate as I see the potential for our work." The result was profound and led to online advocacy efforts that are considered mainstream today.

# 2 Find Your E-Learning "Change Agent"

Consider identifying or recruiting someone who will be your organization's inspiration and force for leveraging e-learning to rethink and improve operational processes, program and service delivery, and human capital development. Your change agent must be highly strategic, steeped in the ways of your organization, and able to effect change through program, development, communications, and executive staff alike. Akin to a chief information officer who advances the use of information and IT within an organization, this person would advance e-learning to improve organizational learning and processes—all in service of meeting organizational mission more effectively. Some larger organizations are already responding to the changing digital world by creating the role of **chief digital officer**. Even if you can't create a formal position, you'll still need someone who understands change management and can inspire, demonstrate, nudge, encourage, suggest, and help navigate if you hope to integrate e-learning into your organizational DNA.

# 3 Designate or Become a "Learning Concierge"

Apart from your "change agent," who must be a leader in your organization, consider designating someone with a background in professional development and training as your "learning concierge," charged with the responsibility of becoming an expert on videos, online courses, games, simulations, apps, and other online educational content relevant to the

needs of your organization. The key is developing an expertise in how to navigate, search, and find relevant content to tailor for others in your organization. The role of the learning concierge is more akin to the role of the **modern librarian**, with sophisticated navigation and communications skills, than to that of an administrator. As award-winning social learning expert Jane Hart **explains**, the learning concierge provides "personal advice directly to workers on how they can address their own workplace learning and performance problems in the way that works best for them."

Author and social media guru Beth Kanter **points out** that the learning concierge fills the critical gap between directed learning (trainings, webinars, and the like) and self-directed/self-managed workplace learning. According to Kanter, it requires a significant set of skills: "information curation skills, collaboration skills, community management and connected leadership skills." For support, check out the **Learning Concierge Society**, which Hart set up in 2013as a new network for workplace-learning professionals. There are also **workshops** that can help you get your learning concierge function up and running.

## 4 Increase Your Knowledge Capture

Consider using video for your communications, but also for knowledge capture. Footage you capture now—from webinars, trainings, Skype sessions, Adobe Connect working group sessions, and so on—can be used later to create videos that convey operational procedures, provide explanations, and serve as how-to guides. The video medium makes knowledge easily accessible. Capture it now, even if you're not yet sure how you will use it later.

## 5 Realize the Power of Remixable Content

Once you are in the habit of capturing the knowledge you create, consider the power of remixing it with other rich content openly available on the Internet. Just as people use iTunes or Pandora to create playlists of their favorite music, educators and learners can remix various course modules to create "learning lists" of their favorite educational content or lessons. With video-editing capabilities on hand, you can create (and then update as needed) the highly customized content your organization needs to improve staff skills and the services you deliver.

## For External Audiences: Share, Collaborate, Improve

Enabled by computer networks and the Internet, vibrant communities of practice have played critical roles in enhancing sharing, learning, and cooperation for decades. Interactive online learning broadens the potential for sharing your institution's successes, lessons learned, and ways of doing business, as well as getting timely, relevant feedback from external audiences that span the globe. In this way, e-learning can enrich existing communities of shared interest and help you identify new approaches for your organization. Here are a few ways to get started:

# 1 Understand What's Involved

Producing, packaging, and marketing e-learning content for external audiences beyond your organization is a big undertaking. Realize that e-learning is not just a new medium you can use to scale existing products and services. What worked in a classroom or conference room won't necessarily work online. Don't fall into the trap we hear far too many people contemplating: "We have great teachers and content. All we have to do is video them and put it online." Wrong! As one thought leader noted, "If you want an e-learning tool that helps people quickly refresh themselves, you can't make them sit through the whole course again."

Benefit from the experience of others who have been through the process of creating online courses. A few places we've found most useful are **Devlin's Angle**, a professor's blog about his experience creating a MOOC; **Ed Tech Frontier**, which offers pedagogical recommendations from **Paul Stacey**, an ed tech expert for adult learning with experience in both the public and the private sectors; a **report from Duke** about what it takes to prepare a Coursera course; and advice from MOOC expert **Donald Clark** on everything from the design of questions to how images should be used.

Even when you have great e-learning content, you're still just getting started. How are you going to design, augment, or deliver it differently for greater effect? Will you add graphics, programmed interaction, animation, web design, simulation, multimedia, or assessment? The success of your e-learning content will depend on the content itself, of course, but it will also depend on how it is packaged, marketed, promoted, distributed, and supported. As one leader put it, "You can make an outstanding video but we know that it won't really transfer skills. . . . Interacting heavily with the customer/learner and being able to meet them where they're at and put them in control of their experience seems like it's the key skill to develop."

For most, entering the world of e-learning is going to take more talent, funding, planning, and research than you expected.

# 2 Bring In the Experts

You don't have to go it alone, nor should you try. Organizations are sure to fail if they persist in launching e-learning offerings with existing staff resources and a cobbled-together infrastructure. Recognize up front the number of skillsets you are going to need, including course design, video editing, web design, production, and social media and online strategies.

Consider partnering with organizations that are production experts. Have an idea for a course? On the high end, consider partnering with Udacity, Coursera, edX, or NovoEd. It never hurts to ask! Otherwise, it's all the more necessary to invest in quality production, product management, and distribution capacities.

# 3 Adopt a Product (and Media) Mindset

When you're producing content for an external audience, keep in mind that the expectations for product quality are high. You'll need to develop a product management capacity—someone who can lead "product design" (what it is and how it's delivered) and the overall integration of the work so it stays focused on satisfying user/market needs. Otherwise, while individual pieces of content may be great, they may end up appearing cobbled together rather than as a unified, marketable product.

# 4 Target Early Adopters

The market for e-learning is growing, but don't make the mistake of assuming that the audience you target for your offline work is the right audience for your online work. Not everyone in your current audience is ready. E-learning represents a fundamental change in approach. Focus your efforts on the predisposed, both within and beyond your current target audience. You're not going to convince people who don't think it makes sense—at least not any time soon. Early evidence indicates that the Georgia Tech **online master's degree in computer science** targets a ready audience. In its first admissions process, the program turned away **nearly 2,000 applicants**. As Georgia Tech, in partnership with Udacity, has demonstrated, the more you understand and encourage the "believers," the more your base of early adopters will grow, eventually bringing along those who are (or become, by desire or necessity) open to change.

# 5 Prepare to Invest

We've seen well-intentioned plans from well-intentioned organizations fail to take into account the financial investment required. Developing a single high-quality course can easily cost $100,000 to $150,000 or more. To get a sense of the cost drivers, check out these two infographics: **Determining the Cost of a Custom E-learning Course** and **The True Cost of 1 Hour of Learning**.

There will always be remarkably talented people who produce wildly successful e-learning courses quickly and at surprisingly low cost (think Sal Khan). We admire and celebrate these luminaries and learn from their accomplishments and innovations. But they are rare outliers. Producing high-quality, effective e-learning courses generally takes significant time, talent, and money.

# Appendices
## Methodology

**Katie Paris** and **Mario Morino** conducted this landscape with support from other members of the Leap of Reason team and trusted advisors.

We asked connectors and influencers in higher education, venture capital, e-learning institutions, consulting, and information technology for advice on whom to engage and what to explore. We then conducted interviews with more than 100 leading thinkers, practitioners, entrepreneurs, and analysts from institutions including AchieveMission; Arizona Community Foundation; Case Western Reserve University; Course Gateway; Coursera; General Atlantic, LLC; Harvard University; William and Flora Hewlett Foundation; Institute for Healthcare Improvement; Khan Academy; Leidos; Northern Virginia Community College; Rio Salado Community College; SAIC; Stanford University; and various ed tech startups. We supplemented these meetings with webinar and conference attendance (e.g., **Saylor Foundation Digital Education Conference**, Society for Applied Learning Technology's (SALT) **Interactive Learning Technologies Conference**).

# Acknowledgments

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# Definitions

Definitions for e-learning range from narrow to broad. While some focus narrowly on online instruction programs, from traditional distance-learning courses to the more recently hyped MOOCs, others much more broadly encompass all forms of technology that may be employed for content delivery and access, digital collaboration, and coordination. Glossaries provided by the **American Society for Training and Development** (ASTD), the primary association of the professional training field, and the **Society of Applied Learning Technology** (SALT) offer encompassing definitions, but the **Wikipedia definition** is most inclusive:

> E-learning includes numerous types of media that deliver text, audio, images, animation, and streaming video, and includes technology applications and processes such as audio or video tape, satellite TV, CD-ROM, and computer-based learning, as well as local intranet/extranet and web-based learning. Information and communication systems, whether free-standing or based on either local networks or the Internet in networked learning, underlie many e-learning processes.

Wikipedia also captures the diverse applications of e-learning:

> E-learning can occur in or out of the classroom. It can be self-paced, asynchronous learning or may be instructor-led, synchronous learning. E-learning is suited to distance learning and flexible learning, but it can also be used in conjunction with face-to-face teaching, in which case the term blended learning is commonly used.

To fully capture its cross-sector implications, we accept the broadest definition of e-learning and extend it to include learning occurring through social media and a myriad of online community approaches such as Twitter, YouTube, Facebook, iTunes, Skype, LinkedIn, Pinterest, Google Docs, Ning, Dropbox, Adobe Connect, and Google Groups—all of which appear on the **Top 100 Tools for Learning** 2012 (Twitter ranks number 1). We also include game-based learning and simulations, because they too, have already demonstrated tremendous potential as learning tools.

# List of Resources

For those new to this topic and interested in learning more, we suggest:

**Three reports** that capture the hype surrounding MOOCs and the potential of online learning to transform education, as well as an analysis of how the field should prepare to adapt:

- *Massive Open Online Courses: Higher Education's Digital Moment?* (Universities UK, May 2013)
- *An Avalanche is Coming: Higher Education and the Revolution Ahead* (Pearson, March 2013)
- *American Revolution 2.0: How Education Innovation Is Going to Revitalize America and Transform the U.S. Economy* (GSV Advisors, July 4, 2012)

More **skeptical views**:

- **"The Pedagogy of MOOCs"** – An ed tech expert argues that MOOC pedagogy needs work.
- **"Without structure, learning crumbles"** – The dean of UVA's School of Business argues that a disaggregated education "doesn't prepare you for life, and especially for professional life."
- **"MOOC Skeptics at the Top"** and *"New England Colleges Under Stress"* – A 2013 Gallup survey finds skepticism of MOOCs among college presidents, while a New England Journal of Higher Education study finds that they are much more confident in their own ability to adapt than in that of their competitors.

A **balanced view** from the Christensen Institute: **"Will computers replace teachers?"** (A preview of the answer: no way, but education "will not meet modern needs at scale if we don't innovate").

Recent **recommendations** from the **President's Council of Advisors on Science and Technology (PCAST)** underscoring the promise of MOOCs and high-tech educational tools, but also the need for continued experimentation and flexibility.

A fairly **comprehensive mapping** of the "Indicators Pointing to Disruptive Innovation in Higher Education" in this **clickable infographic**.  And **in-depth analysis** of the forces disrupting higher education in the book, *The Innovative University: Changing the DNA of Higher Education from the Inside Out*, by Clayton Christensen and Henry J. Eyring (July 2011).

A thoughtful look at the **latest trends** accelerating ed tech adoption and the challenges impeding it in the New Media Consortium's *NMC Horizon Report > 2013 Higher Education* and their **Preview** for 2014 (full report to be released this month). While the reports focus on

implications for higher education, they have relevance for all sectors grappling with ed tech adoption.

**Three newsletters** to consider if you want to stay current:

- **Education Dive** – A daily roundup of the top stories in education, with a particular focus on ed tech and online learning.
- Elliott Masie's **Learning Trends** – A household name in the learning and training industry, Masie sends his weekly take on the latest trends in learning, performance, and technology.
- **EdWeek Update** – A daily roundup of original reporting and commentary from Education Week.

**Stats** on the current e-learning market, an overview of the players, and online trends:

- *Global E-learning Investment Review* (IBIS Capital, January 2013).
- *Internet Trends* (Mary Meeker at Kleiner Perkins, May 2013).
- **"Important eLearning Statistics for 2013"** – An infographic on e-learning in the corporate sector.

**Five sites to bookmark** as go-to references:

- **Centre for Learning and Performance Technologies** – Advice on using technology for learning and performance from award-winning social-learning expert Jane Hart, who coined the term "learning concierge."
- **EPSS Central** – Defines and provides a high-level overview of EPSS (electronic performance support system).
- **Masie** – Elliott Masie's hub for the learning industry cross-sector, with an emphasis on technology-based learning delivery, including performance support.
- **American Society for Training and Development** (ASTD) – The primary professional association in the training/education field.
- **Digital Media & Learning** – A hub for connected/networked/social learning, including game-based, mobile, and peer learning, with a focus on learning by doing ("make-to-learn"), sponsored by the MacArthur Foundation.

And, finally, to better understand how the first generation born into the current age of technological disruption is transforming communication and the transfer of knowledge, read *Hooked Up: A New Generation's Surprising Take on Sex, Politics and Saving the World*, by Jack Myers (July 2012).