



Enterprise Mobile Learning and Development

A Guide for CLOs and Training Managers

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Introduction

I often hear it said that for many people, their smartphone has become as important an accessory as their car keys, purse, or wallet: if forgotten, they will return home to retrieve it. This is because such devices have evolved so greatly in recent years, providing not only the basic personal data-assistant (PDA) functionality of the earlier generation, but access to countless mobile apps, and increasingly robust access to the Mobile Web.

Consider also another fact of modern life: the consistent stretches of wasted time, such as traveling, commuting to work, running errands, waiting in long lines, and more. The question that has long intrigued learning professionals is this: how can we make use of that time by providing learning moments or relevant performance support?

The ability to reach people when it is convenient for them, with powerful learning content or support tools that are relevant to what they are doing, is a compelling story for industry thought leaders to tell. And so they have been telling it for many years, with interesting cutting-edge examples and compelling presentations. But it is only recently, with the explosion of the latest generation of smartphones, and a tipping point of success stories to reflect upon, that mobile learning has truly come of age. Now is the time to understand what mobile learning can provide to your organization, and to do so you need to understand the basics: the “Who, Where, When, What, Why, and How” of mobile learning.

Definition and Scope

Over the past decade there have been numerous definitions of the concept of “mobile learning” (aka, mLearning or m-Learning). Some have attempted to include laptops as relevant devices for mobile learning, while others have argued that the user experience – both in terms of content possibilities and use-cases –

means that including laptops as mobile learning devices muddies the concept. While that might have been an easy response when we only had phones, PDAs, and laptops to consider, what of the Apple iPad and similar tablet devices? They are more mobile and have smaller screens than laptops, but are less ubiquitous than mobile phones, and in several respects have an essentially different overall user experience.

Others have rightly distinguished between mobile learning, and the related concept of mobile performance support. Learning, whether formal or informal, and performance support, are both critical aspects of what a typical Learning and Development (L&D) function in an organization provides. So when we speak of “mobile learning,” are we talking about one or the other, or both?



For the purposes of this whitepaper, we will focus on the use of the latest smartphone devices for a broad range of mobile learning and development purposes, including both learning and performance support. First, why focus just on smartphones? For several reasons. First, smartphones offer far more compelling opportunities to L&D professionals than basic mobile phones can provide. Second, smartphones in recent years have become increasingly common, with many organizations either providing them to employees in several key job roles, or at least supporting them officially through their IT departments. And third, by focusing on this device family, the inherent differences between smartphones and other candidates for “mobile learning” – whether basic mobile phones, the iPad and other tablet devices, or even laptop computers – can be for the moment left aside. It's not that these other devices don't offer compelling learning opportunities (they certainly do), but rather the spectrum of all such devices is so great that it makes discussion of the topic unnecessarily complicated.

Next, why address both mobile learning and performance support? Largely because even in these early days, we are seeing early adopters use mobile devices for both purposes. Some

organizations are leveraging their employees' mobile devices to deliver formal training, such as short compliance courses or informational modules. Others are relying on mobile users' desire for informal learning to provide access to corporate blogs, forums, or other informal learning tools. And many others are focusing on performance support use cases, such as providing job aids or other just-in-time resources to the devices that people always have with them. So to cover only learning or only performance support would leave out a broad range of important usage scenarios.

Who Benefits From Mobile Learning?

An early question to ask when considering the possibilities for mobile learning and development in your organization is: Who will benefit? Who are you targeting and why? There are a couple of ways to approach this question. First, who uses smartphones for supported business purposes, or is likely to do so in the near future? That is, which job roles in the organization use smartphones either provided by the organization or supported by the IT department, such that you can reasonably assume you can make use of it as a delivery mechanism for mobile learning and development experiences? Creating a mobile learning program for knowledge workers in cubicles who may or may not have smartphones is not a recipe for success.

Most often, it is the organization's executive leadership, sales account executives, and field technicians and engineers that have and use smartphones on the job. Such individuals have very busy schedules, travel often or have a mobile job environment, need immediate access to often small pieces of information – and need it now! They also often have small windows of time available between their otherwise hectic schedules of appointments, meetings, travel stops, and so on. As a result, they seek out just-in-time learning, targeted and distilled information that is easy to digest, and the ability to learn when it is convenient for them – not in traditional, formal settings that take them away from the action.

Who can benefit most from mobile learning and development opportunities in your organization will likely be different from the next organization, even in the same industry. Executives, sales people, and field engineers are arguably the most common examples – but this may not hold true in your case. In addition, consider what tasks can be accomplished or easily supported with a smartphone, and then look to see who in your organization performs those tasks. Considering these two perspectives will help you better target your first mobile learning and development initiatives.

Where Is Mobile Learning Valuable?

The next question to consider is where can mobile learning and development be useful? In modern life, most of us have periods of time that are “wasted moments.” That is, we are doing something we must do, but feel that our time is not being as productive as it could be. Examples of this include:

- Waiting at the airport or train station.
- Riding on a plane, bus, subway, or train.
- Commuting to work.
- Waiting for an appointment in a doctor or dentist’s office.
- Standing in line at a post office or other location.



Of course, not all of these situations are created equal. For instance, if you commute on a bus or subway, you can safely make use of a broader range of content on a mobile device than if you drive to work. In the latter case, audio content such as podcasts or other short clips can work fine, but video content, performance support aids, or anything interactive would be dangerous! Consider also the level of distraction involved in these different environments: an airport gate area might have more distractions compared with a doctor’s or dentist’s quiet waiting room.

Can you think of other times in your day when you are doing something you must do, but that you feel is not as productive as it could be? If you have a smartphone with you, likely you take it out and use that time to check email, browse Facebook or Twitter, look at your favorite news website, or even play a quick game. For the L&D professional, the question is: how can you offer additional options for these “wasted moments,” options that are learning and development focused? Can you provide your learners with short, compelling learning experiences to make that time more productive?

Why Mobile Learning and Support?

With anything new in a learning and development context – a new program, a new delivery modality, a new technology or tool – it is vital to clearly identify your goals at the outset and determine the likely benefits of introducing the change. Mobile learning is not different, so arguably the most important to ask yourself before embarking on a mobile learning initiative is the “Why?” question.

In brief, there are many benefits of providing learning and development solutions to mobile devices such as smartphones:

- **Location, Location, Location.** As they say in real estate, location is everything. In an L&D context, being able to provide learning or support opportunities in a way that doesn’t force the user to a particular location (such as a classroom, or their office desk) reduces a significant obstacle to learning and performance improvement.
- **Freedom to learn when convenient.** Similarly, time can be just as important as location. People increasingly want to make the most of their precious time, by being opportunistic and better using their otherwise downtime.
- **Get support at a critical moment of need.** People need performance support now, not later when they information can be provided by a more rigid delivery mechanism.
- **Increase retention from formal learning.** As part of a blended learning solution, mobile learning can provide summaries of key points from a classroom event or a formal training e-Learning module.
- **Motivate to learn and learn to motivate.** Making it easier to learn helps motivate people to want to learn more. And conversely, mobile learning can be a delivery mechanism for motivational quotes, success stories, and more. (This is especially useful for sales personnel, to lift their spirits or boost their confidence just prior to a customer meeting.)
- **Reaching the unreachable audiences.** For some job roles, it can be either very difficult to expect the employees to attend classroom training, or a challenge to deliver e-Learning (for example, they do not have ready access to a laptop or desktop computer). If they have a mobile device, you now have another option for training or providing learning resources.
- **Achieving potential time savings.** Just as e-Learning can often provide a time savings over traditional classroom training, so too mobile learning is an efficient delivery mechanism that can provide the same knowledge transfer and assessment results, but in shorter time than either classroom or traditional e-Learning.
- **The relevance for Gen-Y/Millennial workers.** Young people today have grown up texting their friends, using smartphones as digital life-aids, and more. To then expect them to not make use of these favorite devices for learning and support in the workplace is simply not realistic.

Another important aspect of this question is to consider mobile performance support. This is the providing of job aids, information, or just-in-time resources while the employee is on the job. It literally supports the performance of the individual, and in this case, does so by using their mobile device for the deliv-

ery. This can be as simple as a checklist or other digital document, provided via the executive's smartphone. Or it could be a daily motivational quote that helps build the confidence of the salesperson before he goes on the next critical sales call. Or it can be vital procedure information for the field engineer or retail employee, provided on their smartphones and therefore not requiring paper materials or access to a less-convenient laptop or desktop computer.

When Is Mobile Learning a Sensible Approach?

The previous question of where mobile learning and development can be most valuable slid naturally into a consideration of when: that is, when in the day-to-day action of the job can mobile learning and development be beneficial? To address this question from another perspective, I'd like to invoke what industry thought leader Conrad Gottfredsen refers to as the "Five Moments of Learning Need." In short, these are:

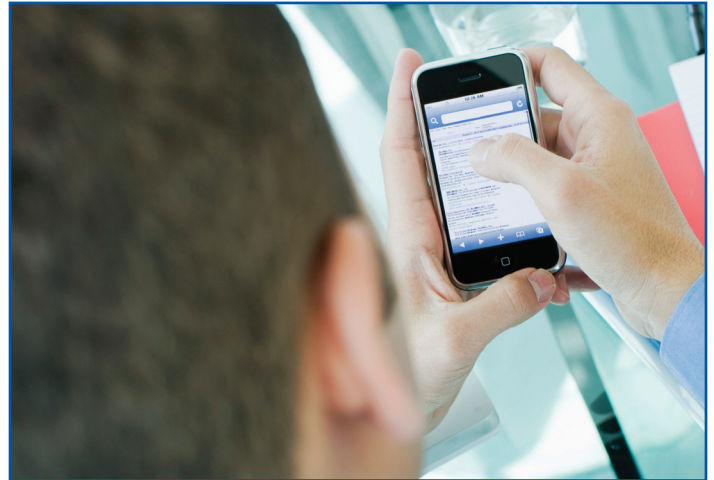
1. Learning basics for the first time.
2. Learning more (intermediate/advanced).
3. Remembering and/or applying what you have learned.
4. When you face a problem.
5. When you need to deal with change.

In general, the first two moments are most often delivered via formal learning approaches – instructor-led training (ILT) classroom events, self-paced e-Learning modules, or virtual classroom events. While formal learning can help with some instances of the other three learning moments (e.g., a course on changes to a process or new features of software), often these needs are best met through performance support solutions. For instance, a job aid is a great way to help with a problem you are facing or to help you remember or apply some of the details from the formal training you had in the past.

Mobile learning and development can be easily mapped to these five moments of learning need. First, while most would rather not take lengthy formal training on their small-screen smartphones, there have been many successful cases of delivering shorter formal training courses in this way (See "A Case Study of Real Mobile Learning Results"). The same can be said for learning intermediate or advanced topics on a subject, and doing so when convenient for you by making use of your ubiquitous handheld.

Smartphones are a natural solution for the third learning moment, as you can quickly look up a key piece of data, or a critical procedure, at this particular moment of need – whether you are traveling or otherwise away from your base of operations. When you face a problem or have a unique question, content on the

smartphone can be a handy reference to provide you with answers – again, just in time and when convenient for you. And finally, dealing with change is best accomplished by being informed of the change in a timely way – and there is no faster way to notify people of changes than by relying on the device that they most often have with them: their smartphones.



Going beyond the "five moments of learning need," another perspective when considering mobile delivery is to focus on whether it is appropriate to deliver certain learning or support content. Some needs usually won't be well suited by what a smartphone can support, which is generally text, static graphics, audio, small-scale animations, and small-scale video. For instance, if you need to provide foundational training on a new software application (used on laptop or desktop computers), then creating standard e-Learning delivery, with exercises composed of robust software simulations or virtual labs, remains the more effective option. You will want to show large-scale animations to teach concepts and features of the software, and then provide exercises that have high fidelity to the actual working environment – neither of which a smartphone's small screen and other limitations can afford.

Finally, an important consideration of when mobile learning can be a good solution is the issue of what might be termed "interruptability." This is a key distinction between e-Learning and m-learning, in that the m-Learning moment is more likely to be interrupted, so the m-Learning content needs to account for this. Again, creating content in shorter segments helps with this issue, as does making sure the user can easily pause and restart at any time.

What Kinds of Content are Appropriate for Mobile Learning?

Considering the where and when of mobile learning and development naturally then raises the question of what kinds of content are we talking about here? The short answer is: it depends. Again, you need to consider what kind of smartphone devices you are targeting and what capabilities those devices have. You also need to consider what kinds of content your specific audiences will want to have access to on their phones. Will they want moderately lengthy courses, or shorter bits of information? Will they want passive reference materials or the ability to interact with the content? How big of a “stage” is required for the visual aspects of the content? Are there important performance differences between large-scale devices and the smartphone-sized device? What kinds of content will they continue to have delivered to their laptop or desktop computers, or provided in traditional classroom learning settings, rather than via their smartphones? (After all, no one is saying that mobile learning is a replacement for all previous learning and development modalities!)



Let's consider mobile learning and development content types split into three groupings, starting with formal learning:

- **Provides an alternate delivery mode for traditional e-Learning.** There have been many successful instances of delivering formal learning courses via mobile devices. (See “A Case Study of Real Mobile Learning Results.”)
- **Shorter formal learning topics.** Rather than provide lengthy formal learning content, many consider mobile devices and mobile learning contexts to be better suited to shorter topics (no more than 5-10 minutes.)
- **Blended learning assets.** Consider how mobile delivery could be used to provide some parts of an overall training curriculum, thereby reducing costly time in the

classroom or increasing the convenience for the learner.

- **Expert videos to provide additional learning.** After you've learned the basics on a topic, short videos from experts can provide more advanced applications of a concept or added depth from stories based on real-world experience.
- **Books.** Although many prefer to read books on devices with larger screens (e.g., e-Readers), if formatted appropriately, full-length books can also be read using smartphones.
- **Book abstracts.** Because of their shorter length, book abstracts are an ideal content type for delivery by mobile devices, whether provided in text content or as audio recordings.
- **Podcasts.** A podcast is a series of audio (or video) content that the user subscribes to so that they can regularly be provided with the latest content in the series. A podcast's content can be any number of things: weekly expert interviews, the latest tips or best practices on a subject, and more.
- **Quizzes/Assessments.** Whether taken as part of a formal course or separately, basic question types such as multiple choice, multiple response, true-false, and others can be used to create quizzes and assessments that can be deployed – with full tracking of results – to smartphone devices.

Consider now the possibilities for mobile learning and development that focus on the need for retention or review:

- **Blended learning assets.** Consider the many ways supplemental content or review materials (e.g., key points or highlights) can be provided as part of a blended learning program. Such use of “spaced learning” can greatly enhance the retention of learning from formal training via traditional classrooms or e-Learning.
- **Book abstracts.** As mentioned already, book abstracts can be used as a time-saver when faced with too many good books to read, but also as a way to review the key points after having read a complicated book.
- **E-learning abstracts.** Just as book abstracts are to books, an “e-Learning abstract” would be for an e-Learning or classroom course: what were the key points and highlights from the material?
- **Test-prep flashcards.** In contexts where a learner is preparing for a certification exam, the ability to review key concepts and procedures when it is convenient for them can greatly improve their chances of success.
- **Follow-up quick-tips.** No matter how good a formal training program is, the nature of human memory means that follow-up quick tips can often be invaluable. Tips

can also be created that provide additional examples or applications not provided in the original course.

And finally, focus now on those scenarios that involve mobile performance support:

- **Job-aids, checklists, or data look-up.** Anyone whose job requires following procedures or checklists can attest to the value that job aids can provide. Why rely on paper-based solutions, or the inconvenience of laptop or desktop computers, when the user has a capable smartphone close at hand?
- **Mobile e-Reference.** In some cases making books or other lengthy materials available via a smartphone is not meant to encourage reading the items in full, but rather to provide a quick reference solution.
- **Motivational audio and daily quick-tips.** In some job roles, such as sales, motivation can be a key driver. Providing regular advice, best practices, and encouragement via the device they have with them at all times can help improve results.
- **Access to social learning.** The use of internal social media such as enterprise discussion forums, micro-messaging platforms, and so on, can provide a great performance support solution by letting workers tap into their most valuable asset: their peers.

How Can You Get Started with Mobile Learning?

With mobile learning providing so many possibilities, and so much potential value for your organization, the obvious question now is: how do you get started? Because every organization has different needs and goals, there is not a single, simple procedure to follow. What you can do, however, is carefully consider these high-level guidelines and decision points:

Start with the end in mind. If your initial mission is to provide formal learning courses to executives in a format that will drive usage – say, via the BlackBerry devices glued to their hands – then you have already simplified your task greatly. If your initial objective is to increase the productivity of your sales team, and mobile support will be one approach you are considering, you require some further thought as to exactly what role mobile delivery will play in the overall solution. Start with the end in mind, and make sure to identify at the outset your goals and your success criteria: how will you know if your first few mobile learning initiatives were successful?

A Case Study of Real Mobile Learning Results

There have been numerous successful deployments of mobile learning for a variety of use-cases and across many industries. As reported in *Chief Learning Officer* magazine in April 2008, one such success story was Merrill Lynch's "GoLearn" initiative.

With a global workforce of heavy BlackBerry users, it is no surprise that Merrill Lynch would have been an early adopter of mobile learning. Like many organizations, their employees struggle to find time for learning and development activities, especially time-consuming and inconvenient classroom-based learning. Traditional e-Learning is a valued option at Merrill Lynch, but they wanted to go further and provide their global and highly mobile workforce even more convenience in when and how they learn.

Their primary goal was to determine the effectiveness of mobile delivery of learning content, including a comparison with traditional e-Learning delivery. The organization also wanted to see what additional uses – and hence return on investment (ROI) – beyond just using email could be achieved from their investment in the BlackBerry devices. The content they used for this initiative was relatively formal: three mandated compliance courses, accessible via both BlackBerry smartphones and traditional laptop and desktop computers.

The initiative involved wirelessly pushing the content out to over 2,100 devices over a seven-week period. The individuals who made use of the mobile delivery the most were, not surprisingly, those at the VP level or higher.

A survey was conducted at the end of the content delivery period, and the results were impressive. Of the 170 survey responses:

- 99% felt the mobile format and presentation supported learning.
- 100% would complete more mobile training.
- Over 75% praised "convenience," "time management," and "training with no distractions" as key benefits.
- 32% completed the learning during business travel, 24% while commuting to work, 26% at home, and 18% in the office or elsewhere.

Further, and perhaps surprising to some, it was found that there was no degradation to learning effectiveness, as there was a comparable average score to the traditional e-Learning control groups. There was zero delinquency, with all GoLearn users completing their compliance training 20 days ahead of the deadline. It was estimated that the pilot group managed to gain 4,270 hours of extra productivity as a result of using the mobile learning option.

The success of the GoLearn pilot led to a global rollout of mobile learning to some 22,000 devices at Merrill Lynch, for use in further mobile learning and support initiatives.

For more information see: "Merrill Lynch: Bullish on Mobile Learning," *Chief Learning Officer*, April, 2008. (<http://www.clomedia.com/index.php?pt=a&aid=2135>)

Survey the organization for what devices are available. Because of the currently fractured nature of the mobile smartphone market, unless your organization has standardized on just one supported device (a decreasing minority of enterprises), you likely will need a mobile learning solution that can support several device types and models. Given the differences in screen size, memory, input interfaces, plug-in and application support, browser capabilities, and more, this gets complicated very quickly. You likely will need to put a stake in the ground and determine which devices you will support initially, and which might be supported in later phases – and be prepared to defend your choices based on what is best for the organization (such as the most users, or the most critical job roles.)



Consider the content type very carefully. In most cases, you will not be attempting to replace formal training (whether ILT classrooms or e-Learning) with content delivery to a smartphone. So if you are not providing “courses,” what are you going to offer? See the lists in the earlier “What” section for ideas, and ask yourself whether you are trying to:

- Provide shorter, 5-10 minute formal learning topics?
- Increase formal learning retention?
- Enable review opportunities or certification prep?
- Provide performance support materials?

Remember also the “Five Moments of Learning Need,” and map your content ideas to the learning moment it provides for. Consider also what existing content you have available, that with some effort can be made “mobile ready” in a way that promotes learning or support via mobile devices.

Consider your content format options. Choosing between audio, video, HTML-content, or other options will be a decision driven by several factors:

- Determine what kinds of content options are supported by the smartphone devices you have determined are “in scope” for your mobile learning initiative.

- What is an appropriate content format for the information being provided? Think carefully about the contexts that the learner will be in when accessing the information: will they be in a noisy airport, commuting to work, or otherwise distracted? For example, audio content can be listened to in more situations than video content can be viewed. So complex concepts that require video animations for proper explanation should not be provided if the user’s context won’t permit them to focus on the visual aspects of the content.
- Determine what authoring capabilities you or your content partners have – what can be reasonably created within the timeframe and budgetary constraints you have available?

Consider your mobile delivery options. Today, there are two primary approaches that are being used to provide content and other experiences on smartphones.

- *Create an “app.”* Creating a native “app” (application) has both pros and cons. Most users are comfortable downloading and installing standalone apps on their smartphones. A well-done app has a clean, simple user interface, can use the full functionality of the device, and can be used while disconnected from the Internet. On the other hand, if you need to support more than one type of device, you will need to create an “app” for each – a major undertaking.
- *Use the device’s Mobile Web browser.* This also has both pros and cons. People are used to using web browsers, and likely are already using their smartphone’s browser to access a variety of websites. Some additional development is needed to optimize a website for a good user experience on a smartphone, and depending on your targeted use-cases, the inability to access the content when not connected to the Internet could be another downside to this approach. Depending on the desired interactivity, a robust app can also provide more options than current mobile browser technologies afford.

Pick a pilot group. As with any major initiatives of this kind, you are most likely to succeed by starting with a pilot group, testing the content and application, making changes based on their feedback, and then rolling out the solution to the broader organization. Because mobile learning and support is new, following this standard procedure is highly advised. In choosing your pilot group, consider selecting a range of participants: include both advanced smartphone users as well as novices, and include both highly motivated individuals as well as some who you expect will be skeptical of this new modality for learning and support. This will give you the broadest range of valuable feedback to improve your solution.

Set proper expectations. Many users of traditional e-Learning have seen a range of content over the years – from the early days of simple “click-next” HTML-based courses, to PPT-to-Flash “rapid e-Learning” courses, to robust and highly interactive Flash-developed content, at times further enhanced by gaming elements, software or business simulations, and more. While some very interesting things can be accomplished with smartphones, the most common approaches to date are to provide learning and development content

in the form of audio clips, video clips, or basic HTML-driven courses. Users expecting your robust, highly-interactive Flash-based e-Learning courses to simply shrink in size and play on their smartphone’s smaller screen need to have their expectations adjusted. Not only is that often unrealistic or impossible, it also is usually not desirable: mobile devices are more often best used to provide shorter pieces of learning content or performance support materials.

Notes:

Element K's Mobile Learning Solution

Element K recognizes the explosive growth of mobile devices, and smartphones in particular. We have been listening to our customers' requests for both mobile content and mobile delivery services. Given the large number and diverse nature of our customers, it was imperative that we provide a user-friendly, practical, broad-ranging, and scalable mobile learning solution. Our solution therefore combines support for the most popular smartphone devices and mobile learning content types, with content assignment, tracking, and reporting. Our solution does all of this while eliminating the hassles and headaches that the active management of a mobile learning deployment can bring to most organizations.



Element K's Mobile Learning solution is a managed service in which we provide all the support you need to start using mobile learning *today*. As a managed service, you can let us perform the tactical rollout and management of mobile learning for you, allowing you the time you need to focus on strategic learning plans. The Element K mobile learning solution includes the following key components:

Managed Service:

- Learner set up
- Content upload and assignment
- Learner communication
- Tracking and reporting
- Supporting learners' technical questions

Optional Services:

- Customization via Cognitive Arts custom mobile content development services
- Convert content to mobile-ready formats
- Custom branding applied to the end-user application

Off-the-Shelf Content:

- Audio and video clips in Business Skills areas such as sales and leadership.

Easy-to-use, lightweight device application:

- Simple content navigation
- Push or pull content
- Offline content viewing
- Synchronization of content usage and quiz data

Content types supported:

- Audio clips
- Video clips
- SCORM-compliant HTML-based m-Learning courses
- Quizzes/Polls

Devices supported:

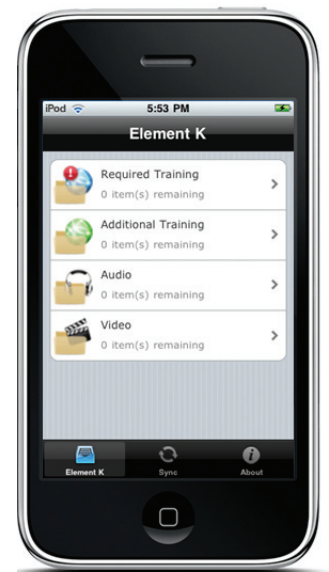
- BlackBerry devices
- iPhone, iPod Touch, and iPad devices
- Windows Mobile devices
- Google Android-based devices

A Learning Solution for Your Mobile Staff

Whether based in the office or working out in the field, today's workforce is highly mobile – and they need access to learning and development resources on their mobile devices. Mobile learning helps your workforce:

- Maximize productivity and minimize downtime.
- Access formal learning content, reference or performance support content, and informal learning resources.
- Increase usage and return on investment (ROI) of existing mobile devices and network infrastructure.

For more information about Element K's offerings, contact your Element K Account Executive or Learning Consultant, or visit us on the web at www.elementk.com.



Conclusion

As noted at the outset, by now thought leaders in the L&D field have been touting mobile learning for many years. But at this point, several factors have come together to make it a great time to dive in: significant smartphone functionality improvements and adoption increases, existing success stories from early experimenters in the field, and providers with strong mobile learning solutions to consider.

Whether you are looking to provide short, convenient, formal learning opportunities; improve retention from traditional classroom or e-Learning; or provide just-in-time performance support solutions to better drive performance...mobile learning deserves your consideration.

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For More Information

Over the past several years, the corporate and government L&D industry has benefited from several good books, research reports, magazine and online articles, blog postings, and other resources on the topic of mobile learning. More come out every month, but at the time of this writing, the following list provides you with some of the best. (Note: There are also countless resources focused on the use of mobile learning technologies in college classrooms and in the academic sector in general.)

Books

The Mobile Learning Edge: Tools and Technologies for Developing Your Teams, by Gary Woodill (McGraw-Hill, 2010).

Designing mLearning: Tapping Into the Mobile Revolution for Organizational Performance, by Clark Quinn (forthcoming from Pfeiffer, 2011).

Research Reports

The US Market for Mobile Learning Products and Services: 2009-2014 Forecast and Analysis, Sam S. Adkins, *Ambient Insight*, August 2010.

Getting Started with e-Learning: Mobile Learning (mLearning), by Patti Shank, *The eLearning Guild*, May 2010.

Worldwide Mobile Learning Trends, by Gary Woodill, from *Brandon Hall Research*, April, 2010.

Time To Get Serious About Mobile Learning, by Claire Schooley, *Forrester Research*, September 2010.

The 2010 Horizon Report, from *The New Media Consortium and EDUCAUSE*. (<http://www.nmc.org/pdf/2010-Horizon-Report.pdf>)

Mobile Learning 2008, a 360 Report from *The eLearning Guild*, July 2008.

Mobile Learning, by Adam Cunningham-Reid, Gary Woodill, and Richard Nantel, from *Brandon Hall Research*, 2008.

Key Articles

"Ode to Mobile Performance Support," by Allison Rossett, *Learning Solutions Magazine*, Aug. 9, 2010. <http://www.learningsolutionsmag.com/articles/500/ode-to-mobile-performance-support>

"Top Myths and Misconceptions of Mobile Learning," by Robert Gadd, *Learning Solutions Magazine*, June 9, 2010. <http://www.learningsolutionsmag.com/articles/471/top-myths--misconceptions-of-mobile-learning>

"Mobile Learning: Obstacles and Solutions," by Joe Ganci, *Learning Solutions Magazine*, June 7, 2010. <http://www.learningsolutionsmag.com/articles/473/>

"When Mobility Meets Learning," by Ellen Wagner, *Elearning!*, May 17, 2010. <http://www.2elearning.com/www/news/top-stories/single-news-article/article/when-mobility-meets-learning.html>

"Can You Hear Me Now?," by Judy Brown, *T+D*, February, 2010. <http://www.judybrown.com/docs/76100228.pdf>

"Don't Leave Home Without It," by Sarah Boehle, *Training Magazine*, September, 2009. <http://www.nxtbook.com/nxtbooks/nelsen/training0909/#/32>

"Merrill Lynch: Bullish on Mobile Learning," *Chief Learning Officer*, April, 2008. <http://www.clomedia.com/index.php?pt=a&aid=2135>.

Blogs

Element K Blog – see the *Mobile Learning* category <http://blog.elementk.com/>

mLearnopedia Blog – from Judy Brown <http://mlearnopedia.blogspot.com/>

mLearning Trends – from Robert Gadd <http://mlearningtrends.blogspot.com/>

eLearning Roadtrip – from Ellen Wagner, see the *Mobile Learning* category <http://elearningroadtrip.typepad.com/>

Other Resources

<http://www.mlearningopedia.com/> – from industry expert Judy Brown, a general clearinghouse of information related to mobile learning.

<http://www.elearninglearning.com/mobile/> -- The mobile learning category from Tony Karrer's e-Learning portal.

<http://en.wikipedia.org/wiki/MLearning> -- the Wikipedia entry on mLearning provides a good overview of the topic.

<http://www.slideshare.net/> -- search this website for "Mobile Learning" and you will find numerous presentations on the subject.

There are also annual conferences focused on mobile learning, or that include mobile learning presentation tracks. See especially the conferences from the eLearning Guild (<http://www.elearningguild.com>).

Element K Mobile Learning

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