With more pharmaceutical companies equipping their sales professionals with mobile computing devices, interest is growing in using them to deliver training. Mobile devices do have the potential to make high-impact training more convenient than ever. However, with the plethora of devices available, the legacy systems and content that must be accommodated, and the various interoperability issues, many companies are now finding that porting or developing training content for mobile technologies is not nearly as straightforward as it seemed.

Navigating this maze can be a challenge, with every path forward appearing to come with significant tradeoffs. For any company to yield the full benefit of its training content, it is imperative that decision makers define the optimal mobile learning strategy.

Mobile learning has the potential to provide significant productivity gains for field-based team members, but as the technology stands, no silver bullet solution exists to create or port high-quality content to all devices that will also integrate with a learning management system. Given the ever-evolving technology, the ideal strategy for companies exploring mobile learning is to assess the existing e-learning content and near-future needs and port/create only the highest-priority content for mobile devices. Save the rest for a time and place when the technology and tools have caught up with the technological requirements of the mobile devices. Most importantly, work with a vendor with the experience to help you make those assessments and the skills to get under the hood of the technology and make it all work.

**Challenges**

The challenges of developing e-learning content for mobile devices fall into three categories: porting existing content, creating new content, and integrating with a learning management system.

**Porting existing content**

Currently, converting existing content for use on mobile devices is time consuming and costly. Most content originally developed for larger devices such as desktops, laptops, and tablets will not work on smart phones very effectively. Content designed for a larger screen can contain more information than will fit visually on the smaller screen of a smart phone. As a result, content designed for a larger device needs to be completely re-engineered in order to work on a smart phone.

Meanwhile, existing content created for non-mobile devices may not port to tablets. Any content that was produced with Flash, for example, is not going to work on the iPad due to Apple’s lack of support for the software. Adobe, the company that developed Flash, has admitted that even on mobile devices other than iPads, the Flash software works inconsistently, and the company has given up supporting Flash for mobile devices as a result.

The alternative to Flash is HTML5, a relatively new but stable standard for creating interactive content. Training content developed using HTML5 will theoretically work across any device, but developers have not been creating authoring tools that will produce HTML5 for very long. The tools that do exist are buggy and lacking in features.
Currently, no reliable tools exist to port Flash-based content to mobile devices. The tools that do claim to be able to perform this function are in their nascent stages and frequently do not work in the desired fashion.

Without authoring tools to create the training content in HTML5, it becomes necessary to code the content in HTML5 from scratch. This level of programming expertise requires a significantly deeper skill set than is possessed by the instructional designers currently on staff in most organizations. As a result, producing content for mobile devices today will likely require a significant investment in time and money.

Creating new content

When developing brand new training content for mobile devices, one option is to hard code the software for the specific device. The drawback to this approach is that the resulting content will likely only be compatible with one type of device. The content creator will need to hard code different versions of the content for every type of device desired.

Theoretically, however, one can create a training program in HTML5 and have it be compatible with almost every device type. Although HTML5 does maximize the portability of content across devices, even in this scenario differences exist in the way individual browsers will interpret and render the HTML. In addition, it takes a lot of time, talent, and skill to hard code in HTML5. Even the most experienced HTML5 programmers today are likely still experimenting. Meanwhile, the HTML5 authoring tools that exist today may reduce the time and cost involved, but they possess minimal features.

Choosing an appropriate vendor for a company’s HTML5 coding needs is also challenging. HTML5 vendors for non-learning content do not necessarily understand the unique needs of e-learning content. The most common context for HTML5 coding is the creation of Websites or games for marketing purposes. While a vendor may have great capabilities, good creative, and a reasonable price quote, the vendor may later claim to have underbid the project as a result of underestimating the sheer amount of content required by an e-learning program.

Connecting to a learning management system

An important component of an e-learning training program is the ability to link up to a learning management system (LMS), a database designed to track learning activities. Most LMSs become portals for all training activities, both online and off. It is an important tool for finding new training opportunities, registering, receiving reminders, and archiving one’s training history. However, content developed for mobile devices often may not communicate well with an LMS.

HTML5 is just a base technology and neither allows nor prevents a developer from integrating a program into an LMS. Some authoring tools may have the LMS integration software built in as a template, but in most situations, that integration will need to be hard coded into the program. Alternatively, tools do exist that can track learning data outside of an LMS, but in this scenario, the company would be utilizing two separate tracking systems: one for standard content and one for mobile content.

Determining strategy

How should you navigate this maze? As mentioned numerous times in this article, because of the current state of the technology, moving all content to a mobile platform is impractical and costly. Determining the most effective strategy comes down to two things: a) determining the right audience and b) determining the right content.

Determining the right audience

Companies interested in pursuing mobile learning initiatives should concentrate on creating/porting content only for learners who would benefit the most from training on mobile devices. So who would benefit most?

First, it is important to remember that the communication and interactive capabilities of laptops, desktops, and tablets are identical. The only difference is the interface, whether it be a keyboard, mouse, or touch screen. A PDF file, for example, will display in the same way whether one views it on a laptop or on an iPad, the only difference being the mechanism by which one scrolls through the document. Tablets provide no additional interactive capability.

The primary advantage of smartphones and tablets is their mobility. Therefore, mobile learning offers the most benefit for field-based workers without ready access to a desktop or laptop computer and who spend significant time in passive activities. Tablets, as opposed to smart phones, offer the most benefit for workers who engage in hands-free passive activity, such as sitting in a waiting room or commuting on a train. Audio-based training content available on smart phones offers the most benefit for workers who engage in hands-on passive activity, such as driving in a car. Thus, the first step is to narrow your mobile learning audience down to those individuals who spend significant passive time in the field. Natu-
rally, sales reps, account managers, district managers, and medical science liaisons all fit this description.

**Determining the optimal content**

Once you have determined your audience for mobile learning, you need to determine which content to provide for them. We offer a simple framework and five-step process for accomplishing this. First, inventory your training content for each target audience.

Second, classify each unit as either high-value or low-value, depending on the company’s unique business needs. High-value content is any content that you feel would have a significant and immediate impact on the job performance of your target audience. Low-value content is any content that would be helpful but would not necessarily have a significant impact on job and business performance.

Third, the content should also be classified as high-priority or low-priority, with high-priority content being anything associated with an upcoming product launch or anything else that is critical to the company’s business objectives over the next 12 to 18 months. Fourth, place each unit of content in the appropriate matrix cell depicted in the figure below. Finally, determine your mobile learning content development strategy using the following as your guide.

When developing new content, our recommendation is to work with an HTML5-capable e-learning vendor to create only the content that is considered high-value and high-priority. For this material, one should anticipate greater than normal costs and longer timelines. Companies can then choose to use authoring tools to produce content considered lower-value but still high-priority.

For companies looking to port legacy training content developed for standard devices to mobile devices, our recommendation is to concentrate only on existing content that is business-critical and must be delivered to mobile learners within the next 12 months. Once the content has been selected, companies should hire a vendor that has HTML5 expertise, doing so with the full expectation that the process is potentially going to be expensive.

For all other content not deemed critical, hold off until the authoring tools begin to mature, at which point it will be more feasible to use in-house staff or to work with a vendor without as high a level of HTML5 expertise. Either option is going to be faster and less expensive. What is critical content will depend on the business context. An upcoming product launch, for example, may require significant therapeutic area training for the field force, in which case porting training content to a mobile platform may be worth the investment.

Finally, LMS integration can be achieved in exchange for a significant compromise in the quality of the content by using an authoring tool, or it can be achieved at a very high cost by hand coding LMS integration for each course. Again, our recommendation is to work with an HTML5 vendor to create courses with hand-coded LMS integration only for high-priority, high-value content needed over the next 12 months. Then reassess the available tools to see what has evolved within that year for low-priority, high-value content. For high-priority, low-value content, one might consider using an authoring tool.

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**Editor’s note:** Nathan Pienkowski, Ph.D., is an instructional design director with the Pharmaceutical Institute (pharmainstitute.com), a subsidiary of Campbell Alliance (campbellalliance.com) and a provider of specialized training programs for the pharmaceutical and biotech industry.

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