

Chapter 11. Implementation & Evaluation

If you build it, they may not come. There are several components to successfully testing, deploying and capitalizing on mobile solutions. These components include managing and governing the implementation, managing the change, and evaluating the outcomes.

IMPLEMENTATION PLANNING

Implementation is not just a matter of deploying. You need a plan, which includes timelines, roles and responsibilities, and checkpoints. You want to manage the roll-out as a success, and to do so you need to ensure that your promises and outcomes are in synch.

One of the key components is a limited-basis trial where some representative set of the population actually puts the solution through its paces. It may be as simple as ensuring that the solution can be downloaded and viewed on all appropriate devices, or as broad as having a stress test where a number of representative individuals go to extreme measures: uploading large volumes of large videos, computing on extreme data cases, or a number of folks trying to use communication tools simultaneously.

You must build testing and revision into your timeline. You may not need it, but it is far better to have the time and not need it than the alternative.

You also have to manage the external impact of the project.

ORGANIZATIONAL CHANGE

As Jay Cross & Lance Dublin point out in *Implementing eLearning* (2002), successful learning technology implementations need to be handled via change management processes. The guidance they provide about managing this aspect is critical. The introduction and use of mobile learning is an organizational change that will have the same requirements as other organizational changes. These changes include messaging, support, and incentives.

Successful organizational change starts with support and buy-in from above. Whether it is a stealth operation as a first initiative, or an organization-wide deployment, those affected need to approve. This includes, at least, both the immediate learning unit management and similarly the management directly above whoever the target audience is. It may also require buy-in and support from the IT unit if their infrastructure is involved. Larger initiatives will need larger buy in.

Their support is more than budgetary and permission. Initiatives are more successful to the extent that the representative leaders participate, whether actually using the solution if appropriate, but at least speaking publicly in support, and discussing the behaviors and benefits they expect to see. Ideally, they also indicate the concrete rewards for participation, either directly as incentives, or the increases in performance that will lead to better outcomes.

With an implementation plan and this support, active messaging can begin. Focus on the benefits to the individual rather than the benefits to the organization, though the former can certainly be contextualized in the latter. Ensure that promises are kept about timelines and outcomes.

Consider what the barriers to individuals acting in accordance with your desires:

- Are the incentives in place actually going to suggest different behaviors?
- Will old habits kick-in and lead to back-sliding?
- Are there new skills that need training beforehand?

There are many ways for a project to go awry: anticipate and prevent them!

MANAGEMENT AND GOVERNANCE

Once the program is in place, it will need ongoing management, and most projects also require governance. Just as an organization has both management to run it, and a board to oversee strategic directions, so too do initiatives need management and oversight.

Management is the policies and procedures that guide operation, and governance is the strategic oversight to look at the operation in the broader context. There are relationships between the two, for instance good managers are consciously working in the strategic context, but neither should be taken for granted.

Management requires responsibility for success, procedures for execution, and policies for handling problems. Ongoing monitoring of content development, hosting, and evaluation is desirable. If users can *capture* content, who is responsible for checking accuracy, determining when it should be removed, and so on? How is the directory to *communicate* with folks developed and maintained? These are not difficult issues, but they are ones that should have clear roles and policies attached.

For example, one of the common problems seen in information repositories is legacy content that is no longer valid. It has to be someone's job to ascertain when content or capability needs updating or termination. Establish responsibilities, perhaps even a matrix structure with content role by domain or topic.

A related topic is the issue of *intellectual property*, who *owns* the content generated, and the associated copyright? While this comes into play initially for employees charged with generating content (such as instructional designers and technical writers), when users start generating content, the policies should be established and made explicit. This will get more important when

you start including customers and other stakeholders in the dialog who are not employees. You may need to establish policies that require agreement before using the capabilities provided.

Governance involves representatives from the stakeholders who oversee the overall approach, determine if the components are working well, and decide how the operation can be improved, expanded, reduced, or ended. For an initial or informal project, that might just be a series of conversations with affected stakeholders. As mlearning grows within the organization, however, it will likely be advisable to eventually form an official governance board and schedule regular strategic reviews.

EVALUATION

Management typically requires evaluation. If you are developing mobile solutions, how do you know what is happening with them? Without data, how do you know whether your mobile initiative is going well, needs tweaking, or should be put out of everyone's misery?

Data can be of many types, and different initiatives can have different evaluation schemes, but you really should be looking to see what the outcomes are. As Ellen Wagner, at the time Adobe's elearning evangelist, said in a mobile panel: "if you are not measuring, why bother?"

START CALLOUT

Issue: Tracking & Reporting

Many, particularly learning groups, are likely to want to track the usage of any mobile-developed solutions. In particular, for any learning content, the outcomes of any assessments would ideally be reported back to an LMS. There are several different lines of thought on this.

Barbara Ludwig and BJ Schone of Qualcomm told me that they have focused on capabilities to get information out to performers, and have not worried about LMS integration. Their attitude is: make it available, and if learners find it of value, they can use it. The implication is clear: make sure what you develop is of value to the learners or performers. Using an iterative design process with participation and formative evaluation by individuals is a critical component.

On the other hand, learning units, particularly if compliance or incentives are involved, will want to track learner performance. Many tools now can integrate with LMSs through various APIs (Application Programming Interfaces), and likewise some LMS vendors have added mobile delivery and reporting to their systems. This trend will only continue as mobile devices become the interface of choice in all situations not at the desktop, and those situations are on the increase.

Regardless, in most cases it should be possible to determine if a solution was accessed, even if there is no record of use. Our ability to track usage is only going to get more robust, as well.

END CALLOUT

Qualitative data, such as user reports, is one form of valid data. Representative samples of the audience can be surveyed for feedback. Quantitative data, such as percentages of the potential

population that are using mobile solutions is another form of data. Downloads from or uploads to a portal can often be measured. Similarly, any mobile web applications should be able to be tracked.

When it comes to evaluating the impact of a learning initiative, I strongly believe that Donald Kirkpatrick's 4 levels of evaluation (*Evaluating Training Programs*, Berret-Koehler, 1994) make sense, *if used properly*. That is, figure out what the organizational change needs to be (for example "if we could just impact X, we could save/earn the organization \$Y million dollars a year", where X could be better decisions). That, ultimately, is the goal you want to achieve, and is your level 4 objective. Then you work back through observable behaviors (level 3, seeing if the performer is persistently demonstrating the changed behavior), and an assessment of learner performance after the learning intervention (level 2, via a summative assessment), to a subjective evaluation of the learning experience by the learner (level 1, mostly useful for improving the learner 'experience'). (I like one extra level I heard a client mention, level 0: essentially "are they even 'showing up' for the learning experience?") Level 2 is not necessarily useful when you move to a performance support use instead of a formal learning experience.

If you start with a strategic goal, and work backwards to achieve it, you should be able to establish a logical relationship between your intervention and the organizational outcome. I think there are ways for the chain to go awry, but the ultimate goal, in my mind, is creating an alignment between the behavior that the learning intervention is trying to establish, the change needed in the workplace, and the impact on the organizational outcomes.

The hot topic of ROI (Return On Investment) arises here. The general argument is that there should be a clear cost-benefit relationship for the investment in mobile. That argument is valid, but most ROI looks at a ratio of cost to benefit, which can be misleading. Consider that a mythical \$1000 investment might yield a \$10000 benefit, a 1000% ROI. Would you really rather do that than a \$200000 investment that yields a \$1M benefit? The ROI on the latter is only 500%, but the organizational benefit is much bigger! Focus on the largest organizational benefit, within the realms of reasonable expenditure.

Back in the analysis phase we talked about impacting metrics. At this point, you should be looking to see whether you have indeed impacted those metrics as much as you figured you could. If not, it is time to determine the reasons you are not having the desired impact, and whether you need to tweak your solution, or whether to shut down the initiative. Of course, if you are impacting as you thought you were, or more so, it is time to leverage your success!

The issue previously raised in Chapter 8, the investment in a platform approach, also comes up here. Investments in specific developments to achieve a particular goal are straightforward to calculate. However, if you are being strategic and using each initiative to also develop infrastructure, that ongoing benefit may be worthwhile capturing. Do think strategically about building capability, not just immediate solutions, and look to justify those investments as well.

There is nothing unique to mobile here, at least when it comes to learnlets or performance support. The learning augment, however, may be harder to separate out from the overall experience. If you can compare an un-augmented course to an augmented one, you have a clear

basis. Without such a baseline, however, the unique contribution of the mobile augment may be harder to establish, but should be valuable.

WE HAVE ISSUES HERE!

Little comes without attendant baggage, and mLearning is no different. Concerns about devices and access, accessibility, security, support, and more all arise. These issues cross legal, HR, and IT. Some general guidelines do exist.

Social Policies

As social media, we need to have rules around the use of mobile devices, and some additional specifics as well. The discussion of social learning can be a target for executives concerned about employees frittering away valuable time, or sharing internal secrets. While these concerns are legitimate, they can also be overblown.

The concern over socialization instead of work is not new to mobile devices. Many years ago, I was consulting to a company that was installing a new information technology infrastructure. The executives asked that email (a new capability at the time) not be enabled. The reasoning was that they did not want employees frittering away their time. Their people had phones, but somehow email was perceived to be 'different'.

Similarly, the concerns over people socializing are misplaced. If the workplace has a culture of sharing and mutual support, the conversations will be productive regardless of tool. On the other hand, if the culture is one where people are not trusted and the management is controlling, irrelevant conversations and activities will occur with or without mobile devices. The rallying cry of my colleagues in the Internet Time Alliance is to provide the tools for productive dialog, and get the culture right. This holds true for mobile as well.

The goal should be to help employees understand what the needs are, and empower them to find the solution. As we have seen, the augmentation enabled by mobile devices is a powerful addition to organizational capability, and should be eagerly adopted as another tool in the execution and innovation quiver, not as a concern for irrelevant activities.

In a similar way, the concern over sharing secrets via mobile devices really is not any different than using any other channel, including face to face, *as long as your users are aware of that*. Users may be ignorant of just how persistent and ubiquitous digital communications can be. What is shared can inadvertently or purposefully be shared more broadly and inappropriately.

The current spate of 'sexting' where teens share inappropriate pictures of themselves, has prompted some serious consequences, and the ramifications may continue indefinitely. These days, anything posted on the web can live indefinitely, removed or not.

Further, it has been found that the lack of immediacy in asynchronous communication (read: email) can lead to surprisingly inappropriate behavior. Individuals have been ruder and more abrupt in email than they would be face to face.

In another way, people can inappropriately pass on information at parties, working on a train, or anywhere else. Just as the inappropriate behavior in conversations and on the phone can and should be made explicit and discussed, so too should policies around mobile communication. In many ways, it is just common sense: do not say anything on a phone, or via IM or microblog or email that you would not say face to face.

IBM, for instance, has had social media policies that say, effectively, “do not do anything in social media you would not do face to face” and that is true for mobile social as well. In short, be explicit about what appropriate behavior is across any media, and ensure that it is also recognized as being relevant for mobile communications as well.

Accessibility

One real concern with mobile devices is the fact that various media are effectively unusable by some segment of the population. Blind users have trouble with graphics, deaf users may have a problem with audio files. And, of course, those with devices that cannot handle all formats may be unable to take advantage of particular forms of content or interactions.

There are two approaches here, and either is defensible. One is to ensure that all materials have an alternate representation: a transcript of an audio file, a text version of a diagram, and so on. This can be required by federal rules, or it can just be the *right* thing to do.

On the other hand, if the job aid or learning augment you are producing is not mandatory, and there is low overhead to produce a mobile-delivered version but much effort to create an alternative, you might consider that reaching those you can is better than not at all. Not everyone will have devices capable of all media, so you can either make provide all the required devices, provide support to acquire any capability missed (such as providing a low cost MP3 player for those with only a PDA), or leave it to user discretion.

Naturally, if you require a particular capability, or it disadvantages someone, you have a strong case to ensure there are all necessary variations. This is increasingly possible, both because tools make this easier and easier, and also because we are recognizing that a small amount of redundancy in development ensures a much greater flexibility in delivery.

Security

If IT block firewall access through the network, it is already being seen that individuals will surf the web through their phone connection. (Robert Gadd proposes that the new ‘cigarette break’ is going outside for mobile access!) If IT provides access, they are creating more security holes for attackers to exploit. What is an IT group to do? And you *do* want to work well with them, for they can make things happen and may have budgets and tools, as well as be an obstacle.

There are two major sources of concerns about security: data on the device, and data in transmission. If data is on the device or can be accessed through the device, and the device is mislaid or stolen (and this does happen), intellectual property can be comprised and a competitive

advantage lost. Somewhat more difficult, but still doable, is if data is being transmitted, it can be intercepted.

There are solutions. Increasingly, handset manufacturers are providing hardware support for encryption, and password locks for data. Third party solutions also exist, for securing the device, securing communications, remotely wiping devices that have gone missing, and even tracking down lost devices.

These require, however, the ability for the IT group to address the software issue. Machines running a Windows mobile solution will have the easiest time, as Microsoft has positioned itself as the enterprise solution. Others have varying degrees of compliance.

A flip side is to make available access via a log-in situation only. The point here is not to detail all the solutions, which will change, but instead to identify characteristics of successful solutions.

You need to help IT recognize that the solution is not to try to control access, but instead to make sure that mobile use meets security and maintenance standards. To gain acceptance by IT, security will be critical. Several characteristics will be required of devices, going forward:

- Passwords and remote wipe
- Encryption
- Digital certification
- Synchronization with enterprise software
- Ensuring conformance with the above

To provide, or not to provide

Implicit in the previous discussions was a decision about whether to provide specific devices or merely make access available to individual devices. As always, there are tradeoffs. If you provide the device, you can take advantage of the specific capabilities of the devices, managing security as well. Naturally, you also incur purchase, support, and management costs. If you only provide access, you do not have the cost or support issues, but you also have less flexibility in who and how you can support learning.

In one instance, a smartphone was provided as a PDA, but learners were able to insert their own SIM cards into the devices and then use them as phones as well, without the cost of the voice service to the organization. At Abilene Christian University, the organization provided a non-phone device *unless* the user agreed to pay for the phone service. The solutions can be as varied as the needs.

Support

And, regardless of whether you provide the devices, there will be issues of support. If you provide the devices, there will be requirements for maintaining, updating, and assisting users with devices.

However, even if the devices are not provided by the organization, users can (and will) have issues with access, formats, restrictions, the other issues. Some devices will have problems with hardware and software limitations, other devices can have problems due to the network used (e.g. provider), and of course some users will just have problems.

A related issue is how to test solutions. With controlled devices, the testing is straightforward, though locational issues may complicate the process. When making access generally available, it may be that certain common devices will be accepted (and tested for), and otherwise the use is *caveat emptor*.

The last issue implies the topic of quality of service (QoS). When providing devices, a QoS will necessarily be established, but in the case of supported devices, the QoS may be dependent on factors out of the control of the responsible group. Clear decisions about what will be handled internally and what will be 'your mileage may vary' will be important.

The takehome message of this chapter is, simply, that the problems are largely not unique to mobile, and solutions that have worked in other contexts transfer in relatively straightforward ways to solve mobile issues as well.

QUESTIONS TO ASK

1. Have you developed your implementation plan?
2. Is your solution IT-compliant?
3. Do you have management and governance in place?
4. Have you established policies that provide sufficient guidance?