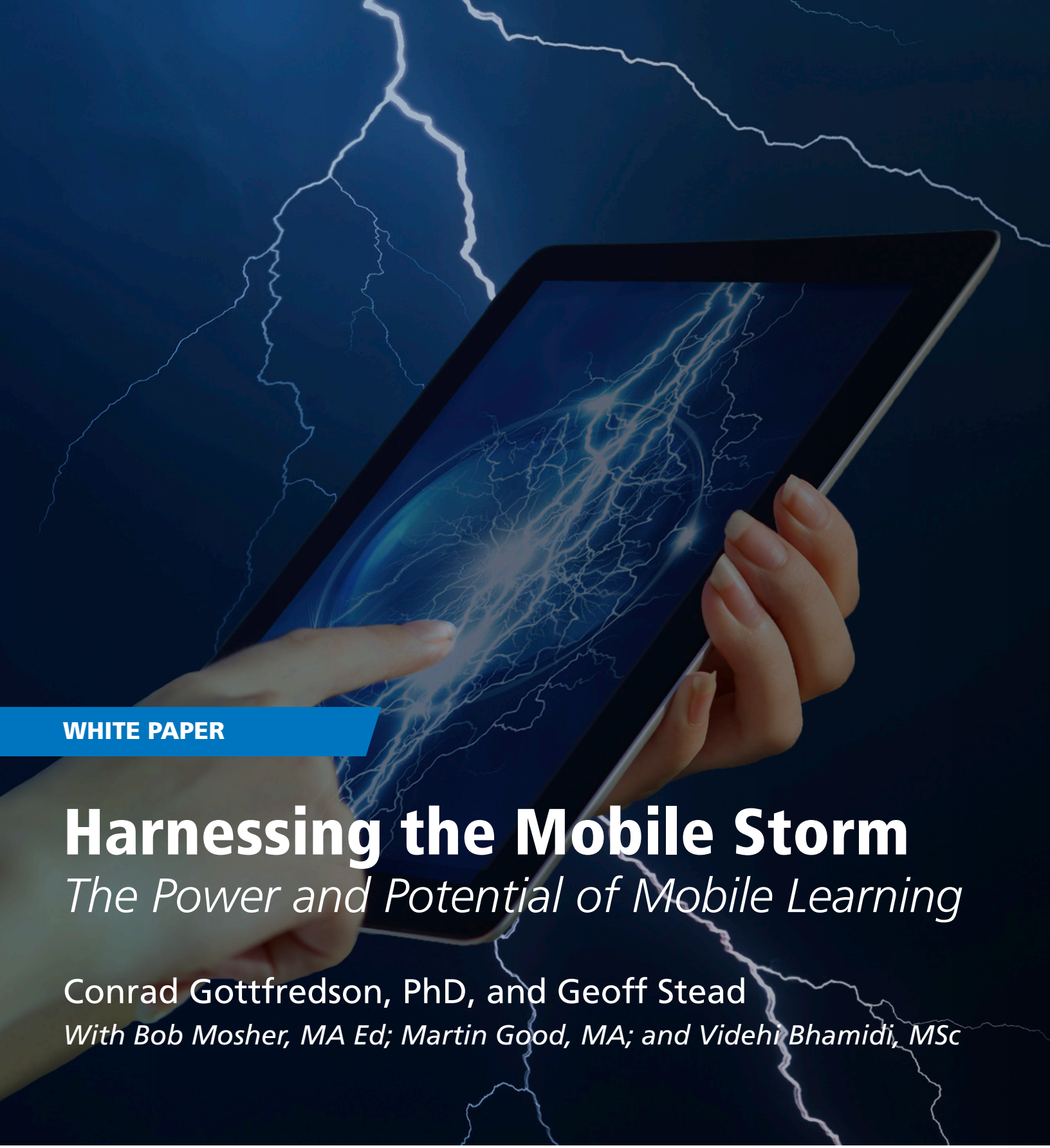

WHITE PAPER

Harnessing the Mobile Storm

The Power and Potential of Mobile Learning

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Introduction: The Mobile Storm

As Typhoon Haiyan bore down on the Philippines, few people anticipated its impact. Some were clueless. Others responded according to their experience with previous typhoons. But Haiyan was far bigger than anyone had experienced and caught everyone off guard.

Similarly, mobile is proving to be a technological storm that is sweeping the earth at an immeasurable speed and magnitude. Smartphones, tablets, laptops, the Internet ("the cloud"), "always on," global connectivity, and social communities, along with new ways of working, playing, and collaborating, have coalesced and embedded themselves in our processes, behaviors, and working practices.

There is no doubt that the combination of web, mobile, and global access is creating an environment where new ideas can travel faster than ever before, creating these unprecedented adoption rates:

Figure 1: Adoption rates for key technologies

Mobile broadband has grown twelvefold since 2007 and is now the single most popular way of connecting to the web, being used by 47 percent of the global population.[1] In 2015, mobile tipped the balance, becoming the dominant way Americans accessed the Internet. Over 50 percent of US web access came from a mobile device.[2] We are constantly connected at home, in the car, at the mall, at the airport, and in the air. Mobile has become an essential tool for managing many aspects of our lives, including:

- Checking the latest news
- Working, wherever we are
- Shopping online and offline
- Processing financial transactions
- Making and maintaining social and work connections
- Managing our health by monitoring fitness, eating, and sleeping habits

Mobile's power to enable learning is continually being extended into new domains, including academic, social, and professional contexts. Adopters include schools, universities, emerging sectors, lifelong learning enthusiasts, and corporations. Examples range from the simple, such as the piano teacher using WhatsApp to send instructional recordings to students, to the complex and mission-critical, such as using mobile technology in medical emergencies and remote surgery.

But when it comes to organizational learning, the potential impact of mobile is off the charts. Like the typhoon, the question is not whether mobile will impact your organization. Mobile is growing regardless. The question is how best to prepare for it and harness this powerful new force to benefit yourself, your work, and your learning.

This "mobile storm" presents a singular opportunity for the learning and development (L&D) community to transform itself into an indispensable strategic partner by embracing mobile's ability to:

- Extend its reach deep into the workflow
- Expand its key activities to include areas like performance support
- Create a culture of learning that suits the high-pressure environment of modern, high-tech, fast-changing workplaces

This paper provides a framework for accelerating workplace learning and performance in today's ever-changing environments.

[1]International Telecommunication Union, *ICT Facts & Figures: The World in 2015*.
[2]Smith, *U.S. Smartphone Use in 2015*.

Extending the Reach of L&D

Throughout its history, L&D has adopted an increasing range of techniques to support learning. "Training," an essentially prescriptive activity, became "training and development," a mixture of formal instruction and long-term employee development. It then morphed into "human resource development." Pedagogical advances brought "open and flexible learning." Technological advances brought eLearning and mLearning, freeing people to learn and study more flexibly than before.

The current popularity of frameworks such as the Five Moments of Learning Need, Informal Learning, and 70:20:10 is rapidly expanding the scope of L&D's role when it comes to organizational learning. The discipline of performance support pioneered by Gloria Gery in the early 1990s is re-emerging in response to these frameworks.

As a result, the construct of mLearning has moved from a focus on mobile devices to one that recognizes learner behavior empowered by an enabling infrastructure of:

- *Devices*—regardless of the size and capability
- *Connectivity*—access to vast sources of data in the cloud
- *Social*—support from peers, learning via work and external groups

This confluence of devices, data, and people is of strategic importance. Mobile provides L&D with a flexible capability to extend its reach deep into the workflow, with a sharp focus on individual work performance. Mobile can deliver *what* people need, *when* they need it, *wherever* they are. It offers solutions to immediate challenges via a delivery system that is increasingly aware of what employees are doing and where they are, enabling intervention to be relevant to the context and situation. Urgent help could be only a couple of taps on your phone away, followed up by signposts to more extensive support and access to expertise.

Recognition of this broader power and potential of mobile is moving many mobile learning leaders to embrace a "mobile-first" strategy. They are reframing what they offer to employees, starting not from the classroom, nor from the desktop PC, but rather from the learners first, supporting access to just what they need at their moment of need, wherever they are.

This approach is proving particularly suitable for "guerrilla learners"[3]—self-motivated employees driven to improve their skills via whichever channels are most available, whether enterprise endorsed or not. (Examples include Google, YouTube, LinkedIn, and Stack Overflow.) Guerrilla learners are fluent in using Internet and social networks as key resources, and a mobile-first strategy helps draw them back into the enterprise's own learning offerings as well as communicating the power and impact of mobile on the business.

[3]Stead, "Do you have Guerrilla Learners?"

Nothing Embeds Like Mobile

Mobile is already integral to employees' lives. This embeddedness makes it the perfect means for enhancing learning and fostering sustained, continuous performance improvement in the workplace. Gottfredson's and Mosher's "Five Moments of Learning Need" is a useful framework[4] to understand how embedding learning can optimize performance.

The Five Moments of Learning Need are:

1. *New*—learning to do something for the first time
2. *More*—expanding the breadth and depth of what has been learned
3. *Apply*—acting on new learning, adapting to new challenges
4. *Solve*—dealing with problems as they arise
5. *Change*—embedding new work practices and improving performance

Figure 2: "Apply" is the key

When it comes to learning, there is no more important moment than *Apply*. If performers fail here, all prior investments in learning are lost.

[4]GFTC, "Learning at the Moment of Need."

This is compounded by the reality that employees constantly face the challenge of change, where they have to unlearn to relearn. Also, at times, things go wrong and they must figure out how to re-solve the problem. These moments of *Change* and *Solve* threaten productivity. It's estimated that one-fifth of work time is spent searching and gathering information rather than performing the work of the organization.[5]

At these moments, when people need to actually perform on the job, they require instant access to tools that will intuitively help them do just that—perform effectively, no matter where they are, whenever it is needed.

The ideal learning and support tool would be readily available at all Five Moments of Need. Mobile technology is the most embedded medium for doing this. Mobile is already integral to everyday working behavior. It is embedded in the work culture already and able to meet the challenges employees face every hour of the day. It is approaching a universally embedded state and is therefore the perfect tool to enhance learning and foster sustained, continuously improving performance.

Mobile Can Be Contextually "Smart"

Not only can mobile provide support on demand, it is also becoming more and more contextually smart as devices and bandwidth become increasingly widespread and powerful. Your device can already "know":

- *Who you are*, including job roles, responsibilities, and skill sets
- *Who is around*, such as nearby peers or SMEs who can provide help
- *Your performance*, including patterns, preferences, and priorities
- *Where you are* in the workflow at any given moment in real time
- *What you should be doing*, both in real time and over time
- *Proximity of tools*, equipment, and resources, both physical and virtual
- *Priority of work*, i.e., what needs to be done and when

[5]Shechtman, "Top 3 Reasons Why We Spend So Much Time Searching for Information."

Contextual smartness is already happening. Ask an iPhone, "Siri, what's that song?" Your phone will listen, process the question, and deliver the answer. On an Android, turn on Google Now and you'll suddenly find contextual advice drawn from data straight out of your life. Google remembers the email about a flight booking and reminds you to confirm it. It shows nearby attractions on TripAdvisor. It draws on your current apps to make personalized cards with summary data such as sports scores, flight details, local lodging, and more.

Mobile is not just about smartphones and tablets. The real smarts are in the ubiquity of the Internet via the cloud, with the increasing number of ways to connect to it and, through it, to other people. Examples include:

- *Wearables*—Watches, fitness trackers, head-mounted displays, Google Glass, and Google Cardboard. These, too, can gather and consolidate data about you from your smartphone and other devices and deliver small, context-aware pieces of information on demand.
- *Internet of Things*—Device-to-device communication means our phones can talk to sensors on buildings, to disposable beacons in product packaging, or even to our kitchen appliances.
- *Ubiquity of the cloud*—Increasingly, the devices we use are just channels to online data and services. This allows for emerging gadgets like Amazon Echo, a small, wireless device you place in your home and speak to in order to ask questions, buy goods, set reminders, and interact with any Amazon services.

Your learners are already in the middle of mainstream mobile technology; their devices offer new insights into exactly what their needs might be. Mobile provides a golden opportunity to offer critical learning and support in the workflow at the very moment of need.

Mobile Provides "Just Enough" Learning

One broad area of consensus with mobile content development is that "shorter is better." Employees might spend 20 – 30 minutes working through an eLearning course, but they won't spend more than five to seven minutes on mobile. This is great news for content reuse because that same five-minute knowledge snack can be used as part of the initial learning phases and then reused as a job aid to be accessed at the moment of need (the moment of *Apply*).

Shortening and reducing content can initially seem strange to traditional learning designers, but it is second nature to mobile content experts who understand how critical it is to allow learners to get in, find what they need, and then get out again—fast.

People need "just enough" learning in small, manageable chunks that address their context and the problem they must solve. With contextual sensitivity, mobile devices can automatically trigger the relevant information at the moment of need.

The message to L&D is loud and clear: *Be where your learners are!* Mobile technology makes this possible in new and exciting ways.

Expanding Mobile's Role in the L&D Offering

As mentioned, mobile's role has broadened to include both learning and performance support. It can cover a range of different use cases:

- Formal training solutions
- Workflow-embedded performance support solutions (EPSSs)
- Targeted business solutions, reference materials, and enterprise information platforms

Formal Training Solutions

mLearning is rapidly becoming a mainstream vehicle for formal training.

At Qualcomm, the main example of "formal" is compliance training. Required compliance courses are available to employees in multiple formats such as face-to-face training, classic eLearning, and mobile apps. The mobile apps are very popular because of their flexibility. Learners can learn in small bites, stopping and starting multiple times across different devices, without needing to log in to the enterprise LMS.

Customer demand is rapidly driving conventional L&D vendors toward mobile. This is obvious when you visit any LMS trade show and see how everyone is promoting mobile access to their platforms. But somewhat frustratingly, many are just squeezing their big-screen solution into a smaller screen. Save your excitement for vendors offering something uniquely mobile.

Workflow-embedded Performance Support Solutions (EPSSs)

In 1991, Gloria Gery introduced the concept of electronic performance support systems (EPSSs), workflow learning systems that use technology to provide "on-demand access to integrated information, guidance, advice, assistance, training and tools to enable high-level job performance with a minimum of support from other people."[6]

[6]Dean and Ripley, *Performance Improvement Interventions*.

The need and benefits of an EPSS are significant. Formal learning, regardless of modality, suffers from a phenomenon called the "forgetting curve." Once a learning event ends, learners rapidly forget what they learned (55.8 percent within the first hour).[7]

Mobile is the ideal channel for help at the moment of need, or the moment of *Apply*, as the learner struggles to act upon what was and wasn't presented in the classroom.

The following Train-Transfer-Sustain framework shows three states of learning. They represent the full range of requirements for a complete learning and performance solution.

In Figure 3, the purple area represents the structured learning process that includes the moments of *New* and *More*. The purple curve peaks at the end of training, when learners have gained mastery of skills and concepts, and then descends into the forgetting curve, where new learning would rapidly decline without follow-up practice, application, and support.

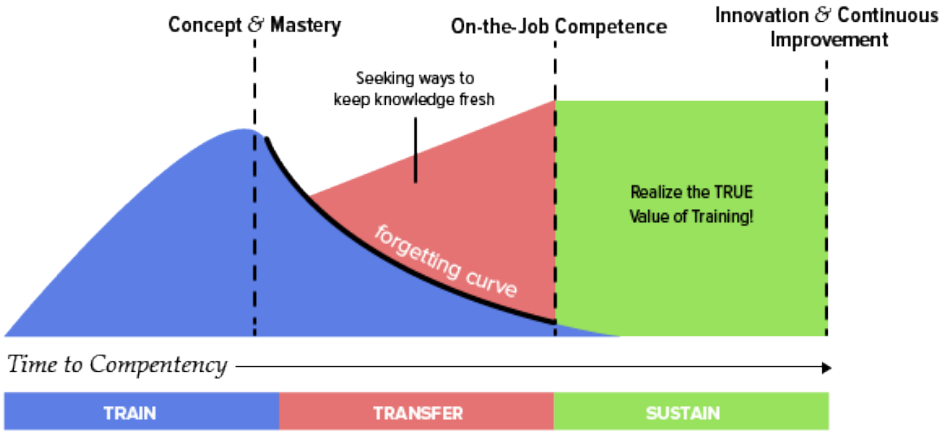

Figure 3: Train-Transfer-Sustain

Mobile performance support (mSupport) enables skills transfer from *Train* (the purple area) across *Transfer* (the red area) to *Sustain* (the green area). A workflow EPSS provides two-click access to each of the job tasks that people need to perform. This can include small nuggets of microlearning to help learners recall their training. Mobile access to job-task support resources helps to translate theory into practice. Mobile support helps learners reach new levels of confident, self-managed performance through a mix of training, workflow support, and social learning through contact with colleagues and other professionals. Achieving self-managed performance is the mark of a successful learning organization.

[7] Jennings, "Real Learning: The Role of Context."

> ***"I work in a lab filled with expensive and fragile equipment. When we upgrade anything, we're all quite nervous we might damage something. But since going mobile, I now have all the instructions and even short video tutorials on my phone whenever I need them. I can even get a message when I switch on a new machine asking me if I'd like some support. And if something goes wrong, I've got remote support."***
>
> —Technician working in a research lab in a chemical company

Mobile is a unifying technology that can bring L&D and performance support closer together. Today, EPSSs are increasingly powered by mobile technology to make it easier to meet all Five Moments of Need across the three states of Train, Transfer, and Sustain.

Targeted Business Solutions, Reference Materials, and Enterprise Information Platforms: Qualcomm's Employee AppStore

An enterprise app store provides a powerful repository to unify mobile resources from multiple sources, including vendors, apps mandated by the business, and apps created by employees who have the expertise and guidance to do so.

Qualcomm has embraced employee-driven demand with its Employee AppStore,[8] which offers almost 100 apps to date ranging from onboarding and engagement to productivity and corporate knowledge-sharing. Part of Qualcomm's mobile-first strategy, the Employee AppStore is a one-stop shop for all employee resources. Some apps provide precise instruction. Others support the development of new expertise. Some are centrally provided, while others are developed by employees to solve very local information needs. It is a healthy mix of the prescriptive and the experiential.

In the AppStore, employees behave like proactive consumers searching for something they need rather than passive recipients of a remote service. The more employees come to the AppStore, the more the demand for mobile apps increases. A growing supply of apps stimulates employee demand and creates an expectation that "if there isn't an app for that, there should be!"

[8]Stead, "Mobilize Your Learning With Employee App Stores."

The Employee AppStore is designed to:

- Support wider learning
- Target a specific learning chunk for a performance requirement
- Meet specific non-learning business needs

Examples of wider learning

- **Leading at Qualcomm:** guidance on leadership techniques and challenges
- **Preventing Harassment:** stand-alone compliance apps that integrate with HR tracking systems
- **Guru Talks:** video platform for Qualcomm experts to share their knowledge
- **Qualcomm Museum:** a virtual tour of Qualcomm's history of technology development and innovation; this is both a physical and a virtual space

Examples of specific learning for performance support

- **New2Q:** On-demand help for new employees navigating Qualcomm's systems, practices, and culture
- **Project Decoder:** On-demand tool to help managers browse through enterprise-wide projects, allowing them to quickly look up project information and status, and to decode results by project name, division, or related specifications
- **ResearchView:** Helps developers and others keep up to date with the latest research in their field and the organizations involved in it

Examples of non-learning business needs

- **GlobalSynQ:** a tool to plan meetings across multiple time zones
- **QMaps:** helps new employees navigate Qualcomm's huge campus
- **QCLingo:** a gamified dictionary of common Qualcomm jargon

Internal app stores can provide scalable and cost-effective digital gateways to employee-powered catalogues of attractive, accessible resources. In addition to the Employee AppStore, Qualcomm retains its LMS and face-to-face programs. Significantly, the L&D team has expanded its services beyond providing traditional learning solutions (which are still popular). Its focus now is on providing rapid responses to emerging employee work performance needs.

Making the Business Case

The business case for mobile is multilayered. While individual projects must certainly demonstrate specific and visible benefits in efficiency and effectiveness, there is also a broader, employee-driven demand for mobile that transcends the individual project. If your wider organization has already embraced mobile, this will be obvious; but if not, you may need to pitch a bigger picture beyond your individual project and demonstrate to your colleagues how much the technological landscape is changing and how important it is to bring mobile on board.

Mobile is one part of a massive global shift. Your business case must bring on board the power of current and future digital technology: mobile, the cloud, "always on," wireless access, the Internet of Things, and the amazing range of affordances these tools provide.

Consider using the CHAMPIONS framework[9] to help formulate your business case. CHAMPIONS is a free-to-use mobile learning checklist to maximize the use of mobile in any mLearning project. It highlights the nine main affordances of mobile technologies—Contextual, High-speed, Ambient, Mobile, Personal, Interactive, Open, Networked, and Social—and provides tools to help you optimize the ones you use in your initiative.

Your business case will provide leadership with a convincing, up-to-date rationale for change, and it might highlight one simple, specific application that you can use as a proof of concept (PoC).

Build a Proof of Concept

Building a good PoC is a powerful way to demonstrate business value and gain leadership support. A PoC project involves rapid development of a mobile app that is as small, simple, and cheap as possible. This type of targeted PoC must have sufficient content to demonstrate its functionality and potential benefits but exclude everything else.

In the startup world, the term "minimum viable product" (MVP) is used to describe the smallest feature set your app will need to be useful. It is a good mantra to adopt if you want to minimize cost and maximize impact. The PoC app (MVP) can be used to engage users, provide feedback, and build business engagement with management. The initial PoC app can often be extended later into a more functional mobile solution.

[9]The eLearning Guild, "Float Releases CHAMPIONS."

Key steps in building a PoC are to:

- Pick a low-risk, high-demand business area
- Specify a minimal but viable feature set (MVP)
- Set clear indicators of success
- Develop the PoC
- Get feedback and iterate
- Validate that you are maximizing mobile use (e.g., consider the CHAMPIONS framework or an EPSS checklist)

A workflow EPSS PoC functions like an app when it is accessed via a mobile device. It is created using EPSS authoring software that can also deliver the same task-based support via the desktop, in print, and from within software. EPSS PoCs are often more expansive than a single app targeting a specific performance need within the workflow. They can also address multiple workflow processes. EPSS PoCs are fully functional but have performance and learning support content only for one or two tasks.

Gather Credible Evidence Through Benchmarking

Benchmarking with organizations that can share credible data will build confidence in your PoC and get backing from your organization's leaders. Use a mix of hard and soft data—such as numbers of downloads or visits, online evaluations, quizzes, and focus groups—to make the business case for mobile.

Anticipate and Mitigate Resistance

Anticipate resistance and be ready to mitigate it with evidence and engagement. For example, there may be data security risks. Involve and engage the security team at the beginning of PoC development. One common solution to data security risks involves setting different security tiers for various categories of information. Often, learning and performance data are seen as low risk—use this fact to sidestep overcautious security concerns.

Quick Tips
• Go for high impact. Start with high-impact business needs and employees who benefit the most.
• Target easy wins. Identify sweet spots and seek existing content that requires minimum changes—for example, new employee onboarding, mobile access to video content, engineering talks, etc.
• For your first mobile project: o Choose one that is critical enough to matter and gain attention, but not so critical that small errors will derail you o Make sure there is a forgiving timeline
• If you like the app store idea, start off simply by building a catalogue: Just pull together a list of low-risk external apps you recommend. Then start working with IT and others in the organization to expand that list.

Inspire and Involve

Engage all stakeholders. The main goal is to infuse learning into the workflow at all Five Moments of Need. L&D should control design but share development and maintenance responsibility with key business stakeholders. Everyone can contribute to developing, sustaining, extending, updating, and improving your mobile learning solutions. Involving and inspiring the right stakeholders will improve the product, reduce the risk of resistance, and enrich your own learning and understanding of other business areas.

- *Operations*—Performance is a critical corporate concern. Operations can clarify requirements and give useful feedback on development.
- *Finance*—Costs must be managed and evaluated in various ways. Involve finance in making this happen in a pragmatic way.
- *Talent management*—Strong learning culture is a powerful attraction for talented people; talent management will have useful input on design with this factor in mind.
- *Public relations*—Investing in imaginative training and development is a powerful element in building a strong corporate brand.
- *IT*—Technology gurus will shoulder support and maintenance if they see business value.

Quick Tips
• Engage supportive stakeholders who are committed to helping you succeed.
• Work with a wider-than-usual range of internal stakeholders. Expand to other teams and other learners.
• Reach out beyond traditional L&D. Mobile can provide a new channel to diverse business leaders. Help solve their business problems with a mix of mobile learning and performance support.
• Messaging is the key. Build momentum for mLearning initiatives.
• Focus on scalability and BYOD: Build, buy, or borrow multiple web apps from multiple vendors, and support as many devices as possible, including iOS, Android, mobile web, and Windows Phone.

Business Impact

Communicate the power and impact of mobile on the business.

It is tough to demonstrate specific return on investment (ROI) for learning tools and courses. But since mobile technology places learning and performance support at the heart of the workflow and is with the learner all the time, it's easier to collect relevant analytics. These include:

- *Data on outcomes* and quantifiable business goals, such as fewer product recalls, more sales, or shorter meetings
- *Variations in usage*; high levels of usage can be an early warning of impending breakdown or a sign of serious skill deficits
- *Micro-polling*, a motivational way for employees to take part in identifying weaknesses or blockages and in creating continuous improvement

Qualcomm uses three different tiers of analytics:

- For *every app*
- For *targeted apps*
- For *specific business challenges*

For *every app*, Qualcomm monitors all usage stats to better understand employee needs and usage. The analytics provide high-level insights, such as whether Qualcomm needs to support different phones in different regions or what times of day people access mobile support.

For *targeted apps*, Qualcomm digs deeper to understand how learners engage with content. For compliance training, analytics provide the detailed tracking required to validate that compliance has been achieved. For content repositories (like Lynda.com or Safari Books), the analytics provide insights into what employees' learning needs are and how they use different devices to access the same content.

For *specific business challenges*, such as decreasing early dropout of new employees, usage data is mapped against other actions and validated against the business goal. In these cases, it is rarely possible to separate out mobile from other factors, but it is possible to show effectiveness and adoption of that aspect against project success.

Quick Tips
• Make sure you have simple analytics in place that monitor ongoing usage patterns, and use these to improve user adoption and solution effectiveness.
• Use data to solidify stakeholder support, modify your messaging, and refine your mobile offerings.
• Run periodical polls or user trials to seek user feedback.
• If you make it, they might not come. Ensure that any apps and app stores have sufficient analytics included to show who is using them and from what devices. You may be able to integrate with existing enterprise analytics such as Piwik, Google Analytics, QlikView, etc. Ensure a critical feedback loop that is well embedded into business.

Conclusion

In 2008, the world's economy collapsed in under 24 hours. In the aftermath, Denis Pombriant wrote, "Change is difficult. … But change eventually happens when the consequences of standing still look worse than the consequences of taking a chance on change. … Standing still is not an option."[10]

All businesses are vulnerable to disruption: market upheaval, technological shifts, demographic churn, and political instability. They need *learning agility* to adapt to any challenge, opportunity, threat, or crisis through rapid acquisition of new knowledge and skills.[11] Many leaders recognize mobile as a critical technology and strategic resource, providing connectivity to employees and leveraging benefits in performance and profitability. In 1988, Arie de Geus, head of planning for Royal Dutch/Shell, put it this way: "The ability to learn faster than your competitors may be the only sustainable competitive advantage."[12]

The intent of this white paper has been to not only awaken you to the power and potential of the mobile storm that is just barely reaching the shores of most learning and development groups, but also to provide guidance in how you might harness this power to help your organization learn at the speed of change. Mobile is the most effective medium for bringing relevant learning and performance support to the greatest number of learners when they need it most, wherever they are, in the form that best meets their varying moments of need.

Go mobile, friends.

[10]Pombriant, "History Rhymes."

[11]Clark and Gottfredson, *In Search of Learning Agility*.

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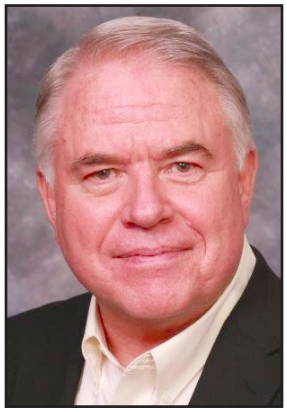

Conrad A. Gottfredson, the chief learning strategist at APPLY Synergies, has deep experience in organizational learning, collaborative development, knowledge management, online learning, performance support, and instructional design and development. Conrad is the original developer of the Learning at the Five Moments of Need framework now in use around the world. He has worked with many of the world's largest organizations, helping them attain higher levels of learning agility. Conrad's experience includes the design and deployment of large-scale knowledge management and performance support systems within multinational corporations. In 2014, Conrad was awarded the Guild Master Award for his accomplishments and contributions to the eLearning community. He holds a PhD in instructional psychology and technology.

Geoff Stead is a global expert in mobile learning and other emerging learning technologies. He is currently based at Cambridge University in England. Until recently, he was the senior director of mobile learning at Qualcomm in California, where he and his team developed the Enterprise Learning AppStore as well as award-winning new methods of using mobile as a learning tool. Geoff combines technology, pedagogy, and vision in an exciting blend that propelled Qualcomm to the No. 1 position in CLO's Learning Elite ranking. He runs the popular worklearnmobile.org and can be found tweeting at @geoffstead.

Bob Mosher, the chief learning evangelist at APPLY Synergies, has been an active and influential leader in the learning and training industry for over 30 years and is renowned worldwide for his pioneering role in eLearning and new approaches to learning. Before co-founding APPLY Synergies consultancy with Conrad Gottfredson, Bob served as the chief learning evangelist for Ontuitive, director of learning strategy and evangelism for Microsoft, and executive director of education for Element K. He is an influential voice in the IT training industry, speaking at conferences and participating in industry associations. Bob was awarded the Guild Master Award in 2014 for his accomplishments and contributions to the eLearning community.

Martin Good is an expert in the application of technology to train hard-to-reach adult learners. He co-founded Cambridge Training and Development (CTAD), one of the earliest publishers specializing in this sector, and spent more than 20 years pioneering how to apply technology to learning. In 2008, he left CTAD to focus on consultancy and writing.

Videhi Bhamidi is a learning technologist at Qualcomm. She specializes in how mobile can be used in the workplace and is passionate about figuring out how technology, design, and pedagogy can be fused to enhance learning.