

The corporate training market is over \$200 billion around the world[1] and it's going through a revolution. While we often think of training as programs or courses, a new paradigm has arrived, one I call "Learning in the Flow of Work." Let me explain.

How Corporate Training Evolved: From Classroom to PC to e-Learning to Digital

The corporate training industry has been around for decades and it has always been impacted by new technology. As the following chart shows, over the last 20 years we've been through four evolutions, each driven by technological and economic change.

In the 1970s and 1980s, when I started my career, we learned in classrooms. The technology was slide projectors and "foils" (plastic laminated slides). The "foils" were written or printed and were often hand authored by designers. (I carried around a ton of them, and they were heavy!) They worked, but were rigid, hard to change, and somewhat colorless.

1980s: The PC Era

When the PC was invented (1981)[2], trainers learned to build video disk and CD-ROM based training. We built expensive programs that included video, animations, interactivities, and assessments. These courses cost hundreds of thousands of dollars to develop, but were more scaleable than teachers, so companies bought them. Vendors like CBT Systems (now Skillsoft) built large libraries of content, and as PCs got smarter the content became more complex.

While this content was useful, it only ran on a single PC, so we couldn't really track progress well. Once PC networking emerged, developers created a tracking standard called AICC[3] (Aviation Industry CBT Committee), which let us track learner progress on a server. This technology later evolved into SCORM, which let us track any form of e-learning content in a database, bookmark your location, track completion, and store your score. So now you needed a database to store all this data .. which gave birth to the Training Management System and later the Learning Management System (LMS).

1990s: E-Learning is Born " The LMS Market Explodes

In the 1990s, as web browsers hit the market. the phrase "e-learning" was born. (I worked for an LMS company in 1998 and we called it "learning on demand" awaiting this moniker to emerge)

Designers found they could build instructional content in HTML and Flash (Flash was an early scripting language that let us build movies and animations in the browser). An enormous industry of content developers, tools, and learning management systems was born. In fact in the early 2000s I made a business out of helping companies select and implement all these tools, and our original business was called www.elearningresearch.com.

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I had the opportunity to meet many brilliant minds in this market at DigitalThink (a pioneer). I wrote a few books (The Blended Learning Book and The Training Measurement Book) and I remember this exciting period of time when people were experimenting with content, building blended learning models, and trying to figure out what to do with all the measurement data they were capturing.

The instructional paradigm at the time was an "online university" or "online course catalog." Courses were carefully built by instructional designers; they had many chapters and were often quite long; and we accessed them through an LMS. The user experience (we now call it "page turning") was mostly linear, and each page of the course had visuals, audio, and sometimes a small amount of video.

As all this content came to market, the LMS market exploded (it is now over \$5 billion in size[4]). Companies wanted their LMS to be the "online university" and we had dozens of LMS companies growing at double digit rates.

Pioneering technology providers like CornerstoneOnDemand, Centra, Click2Learn, Interwise, NetG, Plateau, Saba, Skillsoft, SumTotal, and many others essentially replaced the prior market for "training management systems" and these vendors grew rapidly.

There was a lot of excitement. In the year 2000, John Chambers, the CEO of Cisco, stated that "e-learning would make email look like a rounding error." We believed this new world of online education was going to change the way we learn, and companies strongly considered shutting down their physical corporate universities.

There were plenty of problems of course. Content was expensive to build; the technology was glitchy (video barely worked, mobile was almost impossible, and simulations were difficult); and early LMS systems were hard to use. But quickly the market matured and nearly every company developed an e-learning portal for its employees.

Google Changes the Game, But Learning Vendors Don't See The Potential

In 1998 something big came along: Google was born. Google, within a few years, taught internet users that "browsing a course catalog" was slow and boring when we could just search for what we want. Employees started to ask for search features in their LMS, and we realized that these big bulky e-learning courses were hard to find. A typical LMS search returns hundreds of courses and we realized we didn't know where to click next.

What did the learning vendors do? They didn't respond well. While the consumer world was shifting to search and social networks, LMS vendors moved into integrated talent management. There was an economic boom going on and companies were fighting the "war for talent" they wanted to see learning aligned to all their corporate talent programs, and the LMS seemed like the best system to use.

Within only a few years vendors like Authoria, Cornerstone, Saba, SuccessFactors, SumTotal, and others focused on building systems to integrated learning with all the other HR practices in the company and align it with job roles, performance management, and competency models. (The term "pre-hire to retire" was common.) And soon the standalone LMS vendors were getting acquired.

While L&D managers kept talking about Google as the "next big learning platform" and the iPhone started to change the way we build content (Apple essentially killed the market for Flash within a few years), the L&D market was still living in the paradigm of "courses" and most online content was traditional e-learning.

Talent-Management Takes Over, Vendors Shift Investment Into HR

Over the next five years (starting around 2005) we witnessed a rapidly growing market of "integrated talent management suites." LMS vendors found it harder to sell their standalone products, so they merged, were acquired, or built out performance management, competency management, and many other HR features.

In effect these vendors were "head-faked" into the HR platform market, and they lost focus on modernizing the employee learning experience.

The consumer technology world was undergoing a revolution. In 2005, 2006, and 2007 the technologies of YouTube, Twitter, and iPhone were born. These three technologies, which all came together within a few years, changed the way we interact with content and quickly made video, short-form content, and mobile apps explosively easy.

So what did employees do? They went out to the consumer internet and found some amazing new learning experiences. Companies like Khan's Academy, Lynda.com, and YouTube became far easier places to learn, and employees flocked to them by the millions.

Soon after the MOOC providers Udacity, Coursera, NovoEd and EdX then came to market, bringing a new model of long-form content to the web. And all this was happening while most corporations had an old-fashioned LMS designed to serve up first generation e-learning.

Video and Continuous Learning Emerges

Initially the idea of video-centric, short-form learning was scary: would people learn? would the content be good enough? do we have to edit it all?

Within a few years all this concern went away, and pioneers proved that this new paradigm was real. British Telecom, for example, gave their employees small video recorders and asked them to videotape themselves solving complex customer problems. The CHRO of BT spoke at our conference that year and people were amazed. The Cheesecake Factory did the same thing, and the network of training content exploded in value.

Soon enough a few innovative vendors like Jambok and Wisetail started to build video sharing platforms (Jambok has become Jam by SAP). And the idea of short-form, user-authored video started to grow. (It grew very slowly at first, because companies had no platforms to use.)

In the early days video was hard to author (Flash was a poor player), but as the iPhone became popular self-authored video became easy. Thanks to the growth YouTube, L&D designers started to accept self-authored video (instructional designers were often naysayers). A new paradigm was born.

As you can see in the picture above, during this third phase the 70-20-10 model appeared (a model which I never found very innovative, but it did make a point " that most learning does take place on the job), and we started to reposition the LMS as an "experience platform" not just a "management system" for training. Then a new set of innovative vendors emerged.

MicroLearning and Learning Experience Platforms

Sometime around 2009 the word "micro-learning" was coined and this new paradigm started to take hold. In 2010 Grovo was founded, in 2011 Axonify was founded, in 2012 Degreed and Pathgather were founded, and in 2013 Edcast and

others came to market, offering a new set of tools that ignored the LMS and provided a “modern learning experience” that could integrate, manage, curate, and organize videos, articles, podcasts, and any other form of digital content. And now these systems are now forming the basis for a whole new LMS industry.

Today we formally call this format Micro-Learning, and I define it as shown below.

While micro-learning makes sense (the average employee only has 24 minutes a week to learn[6]), we needed to put it into context, so the new learning platforms also use paths or tracks to arrange content, they are starting to provide machine-driven recommendations, and they are now able to organize and arrange content by role, job title, and competency. (Read The Ten Things I’ve Learned about Digital Learning for more). This new paradigm, integrating on-demand learning with long form education, is now taking hold.

As companies and vendors became more familiar with the characteristics of micro-learning, many new segments of the market have emerged. As the following chart shows, I’ve tried to categorize them into the generic learning experience platforms (those that curate content and provide assessment and recommendations) from adaptive learning tools (those that intelligently space, publish, and promote content based on an outcome). I believe that over the next few years much of this will come together, and ultimately we will see the “next-generation” LMS emerge.

Now We’re Here: It’s Time To Define This New Paradigm

As I study technology markets over the decades, I’ve learned that the obstacles to growth are not always technical, they’re in our own minds. We don’t really use new technology well until we change the way we think.

Many vendors have started to use the paradigm of Netflix or Spotify, defining learning as a series of playlists or content channels. You publish a lot of content, you subscribe to channels or interest areas, and the content is promoted and recommended to you through job matching, AI-based recommendations, and your own history of consumption.

Today most vendors are going in this direction. Cornerstone, Oracle, Skillsoft, Workday, and SAP all have video-learning platforms, and newer vendors like Degreed, Design2Learn, Edcast, Fuse, and Pathgather are gaining steam. Their content recommendations are growing in sophistication, and their platforms are becoming more like Netflix every day.

But we have to remember that corporate learning is very different from music and TV. We don't watch learning to be entertained: we watch it to really learn something. So I think the paradigm has to go further, and I now call it "Learning in the Flow of Work".

Explaining The Shift: Learning In The Flow Of Work

Let me briefly talk about paradigms.

One of the biggest problems we have in L&D is often a lack of imagination. The learning problem is so complex (learning technology is far more complex than e-commerce or most other applications in business), we have to design solutions around some paradigm to guide us to a solution.

In the 1990s we used the paradigm of "course catalog and online university". We copied what we were doing in the real world, and this led to e-learning courses, LMSs, and course catalogs.

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so we built technology for learning paths, competency based learning, and job-aligned learning. This led to integrated talent systems and most of the HCM and ERP systems we have today. In the last five years we've focused on "continuous learning," video, and mobile libraries, so we have built the paradigm of category- and channel-based learning and recommendations, which has given birth to the market for learning experience platforms, micro-learning systems, adaptive learning systems, and a new era of AI-based content delivery solutions.

If you look at organizations like Spotify, Netflix, Xfinity, Facebook, the New York Times, or whatever your favorite content platform is as a consumer, you find a similar series of features which include "channels," "topics," "recommendations," and lots of "featured content" designed to make it easy to find "the next thing to consume." They are easy to use, attractive, and lead you from place to place. And this is the paradigm many learning platform vendors are using.

Yet there are differences I want to point out. Remember that the consumer design paradigm is based on making you want to consume as much content as possible. These companies are often advertising-revenue driven, so their goal is to drive "engagement" so you spend more and more time on their platform. In fact, some may argue they are trying to get you addicted.

In learning the problem is different. We don't want people to be "addicted" to the learning platform, we want them to learn something, apply it, and then go back to work.

In the consumer world we want people to spend more and more time on our content. In the corporate learning world we want them to spend less.

Of course people want the opportunity to browse around and find content they like " this is the essential innovation of the internet itself. But as our research shows, this type of usage is relatively small at work (we simply don't have time to browse around all day), and the more urgent and consequential applications of learning are tips, recommendations, suggestions, and tools that help us get better at our jobs. And this is where I believe micro-learning and learning experience platforms will go.

This Approach Is What People Want

LinkedIn just released their latest research (4,000+ L&D and business professionals) and asked people how their workplace learning could be improved. Guess what the #1 issue was: people do not have enough time. "Getting employees to make more time for learning" was the #1 challenge they cited, and among the learners who responded, 58% want to learn at their own pace and 49% want to learn in the flow of work[7].

This research is totally consistent with the latest research from O'Reilly, which also finds that approximately 50% of all learning interactions from their technical community (software engineers, analysts, and other technical professionals) is for "in the moment of need" technical support. These are people who understand the basics of their jobs but want pinpoint information, technical answers, code snippets, or quick answers to questions they face right now. I think we can all agree that everyone needs this kind of support.[8]

Our research in 2015 found that among the 700+ organizations we studied, the average employee only has 24 minutes a

week for “formal learning.” People simply do not have as much time as they’d like to learn in a formal way, so this informal “in-the-flow” work is just necessary for success.

How Will This work?

Consider applications like sales training (every company does this), safety training (every manufacturer or distributor does this), leadership development (a \$14 billion market), and all types of technical training for engineers and technicians. What we ultimately want to do is embed learning into the platform in which they work, so the systems can coach and train you to be better on the job. And this is where all this digital learning is likely to go.

Consider the following scenario. A large distributor has more than 20,000 sales and service professionals around the world. (This is a real company.) They all use Salesforce.com as their daily system for work and activity tracking. Why wouldn’t this system promote and recommend learning whenever they open an opportunity, or suggest simple videos or tips to help remind the salesperson how to price, manage, or close a deal? This kind of solution is in the market today.

In the application of safety and operational training (an enormous market in most heavy industries), there are now adaptive learning solutions that deliver small 2-3 minute videos each day when an operator checks into work. The learning is carefully curated, spaced, and designed to deliver an outcome “ and the employee answers questions (including questions about their confidence in the answers) to give the system enough information to decide what should come next. This is happening now.

Consider sales professionals. A retailer now delivers operational and sales tips to their employees at kiosks and checkout counters, published to be used when the employee has slack time. Another company now delivers carefully spaced sales training whenever a new product comes out, and the employees can even “practice” what they’ve learned (platforms like Practice and Rehearsal and D2L do this) so they can use what is called “social assessment” to let other people coach their peers on the content.

These applications all build on the 20 years of infrastructure we’ve built (search, video, mobile, recommendations, and fast internet access) and add the principles of spaced learning, designed repetition, practice, and

competency-driven recommendations right into an employee's work environment. And since so many of us now use Outlook, Slack, G-Suite, Salesforce, or other standard productivity platforms to do our work, these tools can deliver conversational interfaces right into the work environment.

I recently met with a world-renowned medical institution who implemented a collaboration tool years ago (they implemented Jive) and have finally gotten people to use it all over the company. As they go out and look at new learning solutions, they told me they are worried about getting people to "leave" the system they have and move to a new one. Today they hardly have to. Now you can publish and interleave your micro-learning into the flow of work, and then nearly guarantee that people will use it and see value quickly.

Several of the world's leading financial service institutions now use online books and job aids to give software engineers "instant support" when they have coding problems. Systems like GitHub, StackOverflow, O'Reilly Safari, and others are essentially "Learning in the flow of work" already. Exciting new tools like WalkMe, GuideMe, and EnableNow are real-time learning tools that understand your behavior in various applications and give you real time guidance and performance support without you even asking.

I'm not saying this is all out of the box and push to operate yet, but it's coming fast and as more and more vendors provide plugins to Slack, Outlook, Salesforce (Salesforce has its own learning infrastructure called Trailhead), and G-suite, the sooner you'll see this coming your way. One of the companies I met with recently just implemented the entire G-suite for their 5,000 employees and they told me every employee is now using Google Hangouts and YouTube as their learning platform. Why not build on that and put all the other infrastructure behind it?

The corporate learning market is over \$200 billion in size and there are hundreds of applications and domains to explore. While learning in the flow of work is not necessarily the solution for every application, it's coming fast and I believe it's the paradigm you should design around whenever you can.

[1] Proprietary Bersin by Deloitte research

[2] https://en.wikipedia.org/wiki/History_of_personal_computers

[3] AICC stands for Aviation Industry CBT Committee, and was the core tracking architecture then used by SCORM

[4] Bersin, & Proprietary research

[5] <https://www.amazon.com/Blended-Learning-Book-Practices-Methodologies/dp/0787972967>

[6] Bersin new learner research

[7] LinkedIn Learning Study 2018 <https://learning.linkedin.com/resources/workplace-learning-report-2018>

[8] O'Reilly corporate learning research

Reference

[Leadership and Systems Improvement for the DNP](#)

[Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research \(6th Edition\)](#)