User Generated Content – An Evolution in Social Learning

Table of Contents

Introduction

Learning is an inherently social activity. The interaction between teacher and student, regardless of the medium of training delivery, has always been critical in advancing learning outcomes. In recent years, the social media phenomenon has added a new dimension to the teacher / student relationship creation and publication of user generated content (UGC).by changing the traditional flow of knowledge from teacher to student to a more collaborative learning style characterized by the multi-directional flow of content.

While the emergence of social media has a significant impact on all facets of business, training and development is arguably experiencing the most dramatic level of change. Social media tools and the wealth of increasingly rich user-generated content that they produce allow:

- Subject matter experts (SMEs) to create content rapidly and in a number of formats,
- Learners to independently navigate available learning content to suit their immediate need
- Authors and SMEs to create connections within their networks of practice, and
- Learners to share experiences, contextualize content, and collaborate on different activities

Estimates indicate a ten-fold growth in user generated content (UGC) every 3-4 years.

Because of the widespread dissemination of valuable and instructive user generated content, the line between formal (institution generated) and informal (user generated) learning content is quickly disappearing. As both corporations and individuals populate the social networking landscape with learning content whose utility often exceeds that of commercially publishing material, there is the potential to leverage this rich source of content to improve learning products, drive new instructional delivery models, and improve learning outcomes. As this user generated content tsunami overtakes learning organizations (with some estimates indicating a ten-fold growth in user generated content every 3-4 years[1]), it is easy to envision a greater reliance on allowing learners to support themselves by tapping into the knowledge of others – a term the industry refers to as *Social Learning*.

As social learning continues to rapidly take hold, organizations are witnessing a new normal, where the definition of competence shifts from simply applying knowledge and skills to *continually acquiring and adapting* knowledge and skills. As performance support gurus Gottfredson and Mosher point out in their Learning @ the Moment of Need blog[2], performer-generated content developed through social networking is extending performance support capabilities in response to the

[1] *User-Generated Web Content Will Grow Rapidly Through 2010,* Michael Inouye, Sep 06
[2] *http://performancesupport.blogspot.com*

widespread need for fingertip knowledge support. As a result, social networks will soon be the de-facto performance support platform and the venue of choice for many learners seeking flexible access to targeted information at or near the point of need.

Social media puts training departments at a crossroad. To remain relevant and effective, learning organizations need to rapidly embrace a knowledge strategy that:

1. is more flexible through the use of standard content and metadata mediums like XML,
2. leverages both formal and informal content,
3. supports the kind of learner autonomy that social media users have come to expect, and
4. optimizes for “just in time” delivery.

Absent a knowledge strategy that incorporates these concepts, learning organizations and the content they manage risk being marginalized.

Driving the Value of UGC through XML

Today, multiple industries embrace the openness and ubiquity of XML to gain efficiencies through content reuse and platform interoperability. XML, in its most basic definition, is simply a way of labeling information to provided detailed access to the content by identifying its components and structure. This mark-up provides a handle for each particular information unit and says something about the content, allowing a more flexible and sophisticated handling of information. Managing UGC using XML brings significant benefits to Social Learning in the following ways.

Ensuring Content Portability

By providing content and its descriptive information in non-proprietary formats such as XML, learning publishers reap tremendous gains in content portability. Portability is usually reckoned in terms of the ability to transmit or transform the content itself in an automated or near-automated fashion to suit a new medium, content channel, or destination format requirement. By applying content portability to UGC, we provide two distinct advantages to training content:

- ***Content Blending:*** Providing standards-based XML to describe and deliver social media content and the supported contexts for its use is a key step in enabling automated and personalized content assembly - frequently referred to as Custom Publishing. Educational publishers have had tremendous success leveraging custom publishing applications to deliver their high value content to customers and now have the opportunity to exploit this further by incorporating valuable UGC to their content assembly mix.
- ***Future Proofing:*** By encoding content and its descriptive metadata using non-proprietary standards like XML, organizations have in effect future-proofed their

content, making it easily accessible to future standards and formats that will be compatible with XML thanks to its marketplace predominance.

Maximizing Accessibility and Scalability

Social Media" succinctly identifiesTwo characteristics are helping to make social media so potentially relevant and so powerful in publishing and eLearning today – accessibility and scalability[3]3.

Sites like LinkedIn, Facebook, Twitter, MySpace, YouTube, and others are offered pervasively, with a client for virtually any type of information exchanging device. The degree to which these applications (and the content they deliver) are able to scale up and down the client device spectrum, and from hundreds to hundreds of millions of users, demonstrates the efficacy of social media platforms in the delivery of complex, dynamically evolving content.

Educational publishers can increase the value of their learning products by incorporating valuable UGC into their content assembly mix.

By ensuring that learning content is stored in a readily transformable medium like XML that can rendered into standard formats for a wide array of viewing devices (such as the use of XML-formatted content and metadata to support emerging eBook standards, as well as device-optimized formats tailored at specific platforms like the iPhone/iPad, Kindle, Nook, etc.), learning organizations can better support the free flow of content to and from social networks and the increasingly mobile users who rely on them.

Emphasizing Content Modularity

Content that is captured by or distributed through social media is typically delivered in smaller, more granular pieces than formal learning content. When these pieces of UGC are supported by XML-based content, metadata, and contextual information, they become far more useful in scenarios where dynamic content is delivered in custom ways, such as user-driven assembly, role and end-user-based filtering.

In this context, we can look at reusable learning objects (RLO) as the precursors to UGC for social learning. When RLOs were first introduced by Cisco in 1999, the key enabling technologies (including the descriptive standards and content distribution mediums) lagged behind the concept, so this first initial attempt at RLOs fell short. However, 10+ years later, leading information publishers such as Informa, Apollo Group and The Princeton Review are successfully leveraging RLOs across their multitude of learning products to deliver customized learning across multiple formats. In fact, these RLOs are now starting to be fed into social media platforms such as blogs, wikis and social networks. Using XML-based metadata to tag UGC in a similar manner allows organizations to take this to the next level by allowing learners to self-support by filtering through massive volumes of UGC for relevance, quality, timeliness and usefulness based on community feedback.

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[3] *http://en.wikipedia.org/wiki/Social_media*

XML is a key enabling technology for driving content modularity, and has been used effectively by both Flatirons Solutions and Xyleme in the implementation of systems that support this type of component-ized, contextual and user-directed content delivery capability. The use of XML for the modeling of extended metadata can be a flexible and scalable way to help enable this type of free flow navigation and, by extension, enable greater levels of learner engagement.

Better Integrating Formal and Informal Content

Training is no longer just about churning out well-designed content but also about addressing social aspects of learning which is bi-directional.

Learning organizations have become adept at creating, managing, and distributing their content in increasingly flexible ways through the use of portable information formats such as XML, through the adoption of robust Learning Management Systems, and through close integration with Enterprise Content Management platforms. Just as learning organizations once bridged the gap between learning and enterprise content, a similar requirement has emerged in the wake of the social media phenomenon: namely the need to seamlessly integrate formal learning content with user-generated material created by an increasingly wide array of subject matter experts. As the benefits of social learning manifest themselves through the organic adoption of user generated content by learners explicit consent of the learning organizations that serve them), learners are increasingly charting their own course. Unless learning organizations can add value to this social learning dialog, they risk marginalization.

Augmenting Formal Training with Informal Content

he result of this UGC revolution is that social learning has shifted the mandate of today's training organizations. It's no longer just about producing formal learning content, however well designed, but also about addressing the social aspects of learning in a manner that recognizes the improved outcomes associated with the use of UGC and social media. The user-generated learning content resulting from social media now must be seen as a valuable (and necessary) resource for augmenting formal learning content. Organizations are making tremendous strides in implementing aspects social media into formal learning.

Some of the ways in which learning organizations can start to embrace informal content as part of their learning strategy include:[4]

- Creating subject-matter blogs
- Sharing presentations/videos on sites such as SlideShare and YouTube
- Using wikis to create collaborative learning spaces

[4] *The State of Social Learning Today and Some Thoughts for the Future of L&D in 2010,* Jane Hart, Jan-10

- Using social networks and platforms like Facebook or Ning to create learning communities

To get the maximum benefit from supplementing formal instruction with social media tools, organizations must recognize that social mediums are multi-directional, and that learners helping each other achieve greater results. Many learning organizations resist the inbound flow of content, feedback, contextual information (tags, reviews, etc) and other UGC, and as a result do not realize the full potential of their learning communities. Likewise, they inhibit the flow of content between learners. By better accommodating and learning from the multi-directional flow of content in social media, learning organizations can:

- Gain insights into how employees learn and better tailor instruction to suit these learning patterns
- Supplement formal content development and improve the quality, quantity, and relevance of learning content through the addition of UGC
- Create efficiencies in SME contribution, knowledge capture, and content review

By embracing these and other core concepts outlined in this document, learning organizations and their content developers can become catalysts for continuous learning rather than simply purveyors of formal content.

Leveraging Social Media Outlets for Multi-directional Content Flow

The phenomenon of user generated content has challenged traditional content distribution models, which remain primarily unidirectional. For learning organizations to fully benefit from the timely, targeted content that social networks provide, a more multi-directional approach must be implemented.

Some of the specific steps that can be taken to help facilitate the free flow of usable content and metadata include:

- **Integrate UGC feedback into formal learning content management:** Feedback from forums and content from blogs and/or wikis are examples of valuable information that can be pulled or linked into learning content repositories to provide a unified view of organizational and social content. This pool of connected assets gives authors and instructional designers a more powerful arsenal of resources for creating compelling learning (formal or not).
- **Create Subject Matter Networks (SMNs):** Socialize formal content by creating communities around its subject matter to foster rich dialogue around topics and to leverage connections between content authors and their networks. In this way, formal content is now supported and supplemented by an ecosystem of experts and related information. For example, at Xyleme the “Frequently Asked Questions” section of our user guide comes primarily from our product SMNs.

- **Incorporate social media into editorial workflows:** Allow social collaboration to be another step in the review process by publishing formal content to internal (or external) communities for editorial review prior to its wide release. Capture this valuable user-generated feedback and route it into the formal review workflows to help better shape learning content to the needs of users.

- **Republish UGC as part of formal learning products:** Monitor your social learning networks and capture the relevant UGC identified to be of potential value to the organization's learning products. Send this UGC through the formal editorial workflow to check for appropriateness and quality standards, and then re-publish this content – in the appropriate context – to formal training publications to supplement and enrich these products. For example, supplement your product training materials with instructional demos created by your users and posted on YouTube. Many learning publishers engaging in this process have found that the inclusion of this user-generated "supplementary" content has dramatically increased learner interest in and inculcation of the learning content.

- **Leverage Social Media as an outlet for testing and refining pre-release content:** Market analysis is costly, time consuming, and often erroneous. Many learning publishers are discovering that social media outlets are a more productive outlet than traditional market surveys for getting measurable feedback from learning users to help refine and improve the market-ability of their offerings. Social network feedback is also available nearly instantaneously, and at little or no cost (other than the time to excerpt the learning content in an acceptable format and post it on the social media site), and can provide actionable insight needed to produce more compelling learning content.

Supporting Greater Learner Autonomy

A fundamental distinction between the social learning story unfolding in UGC outlets today and the assumptions grounding formal learning has been the degree of learner autonomy. The explosion of alternative learning content on social media sites has demonstrated that learners are far more adept at self-selecting the content appropriate to the task at hand than previously recognized.

Acknowledging Multiple Valid Learning Paths

Traditionally, training organizations have been focused on structuring learner paths through a set regimen of formal content in order to achieve a training goal in repeatable and predictable ways. The emergence of social learning has challenged assumptions about the best path to effective learning being a rigid and linear one, and shown that some learners can leverage user generated content to learn more quickly, effectively, and cheaply than formal alternatives allow.

Progressive learning organizations are beginning to understand that learning materials they produce, there need to be multiple paths for

Learners can often leverage USG to learn more quickly, effectively and cheaply than formal alternatives allow.

learners through the learning materials the organization produces to gather usable knowledge. The degree to which social media sites like YouTube , Wikipedia, Flickr, WordPress and others have superseded many “traditional” formal content alternatives is a testament to the degree to which users are able to reach a positive learning outcome with minimal external guidance. By inculcating some of the key lessons of successful UGC venues, learning organizations can help to ensure that social media will be an asset rather than a hindrance in the uptake of complex content dissemination and learning.

XML is a key enabling technology for supporting learner autonomy and has been used effectively by both Flatirons Solutions and Xyleme in the implementation of content and learning systems that support this type of modularized, contextual and user-directed content delivery capability. The use of XML for the modeling of extended metadata can be a flexible and scalable way to help enable this type of free flow navigation and, by extension, enable greater levels of learner engagement.

To support a more user-directed learning navigation model, learning organizations should move beyond the initial attempts at modularizing content represented by learning objects, and work toward creating and modeling their learning content in even smaller chunks (often measured in seconds rather than minutes). By producing small discreet units of learning content that is more thoroughly described and more readily available for dynamic delivery than traditional formal content, learning organizations can more effectively mimic the type of rapid fire, user-directed content traversals used so effectively in social media sites.

Reflecting Learner Roles and Context

An important aspect the barriers between formal and informal content is fully understanding in promoting learning autonomy is an understanding of the roles and contexts associated with a learning interaction. operates, systems delivering the increasingly comingled stream of both UGC and formal learning content will eventually be limited in their efficacy. Increasingly learning systems will be delivering a co-mingled stream of formal and informal content. In order to make those systems effective, instructional designers must have a well articulated understanding of user roles and the context in which it operates.

Learning interactions leveraging blended content achieve a far greater degree of consistency when leveraging content models that include explicit support for contextual concepts like:

- *Subject matter* – The degree to which the content aligns to a particular topic.
- *Intended audience* – The target audience, demographic, role for the learning content.
- *Source* – The content source or author, potentially either an individual or an organization, their role, their context in relation to the information being conveyed.
- *Editorial integrity* – The degree to which the content has been subjected to editorial review to ensure that its length, tone, and focus are appropriate.

- *Provenance* – The source of the content, and the degree to which this source is a trusted one.
- *Vetting* – The degree to which the content has been subjected to peer review or other vetting process to ensure its accuracy and increase its value relative to less scrutinized material.

XML constructs for capturing this extended metadata, when paired with an XML server technology to dynamically query the stored contextual information and process it for delivery in a given learning transaction, offer learning organizations new capabilities in terms of learning delivery. Characterizing formal or informal content "snippets" using XML metadata allows those reusable content chunks to be presented in context-aware ways for assembly into custom publications, lesson plans, or instructional presentations. Supporting this kind of user-driven experience helps better engage users, allows them to tailor potentially complex material to suit their unique needs, and provides critical support for the concept of multiple paths to the same learning end goal.

Reflecting these contextual facets becomes even more critical in a blended content environment, where the volume of content has the potential to overwhelm absent this important metadata.

Leveraging the Learner

Part of successfully enabling the multi-directional flow of content in blended learning environments is allowing the participants in the learning process to improve the quality of the learning experience for others that will follow. There are a number of ways that learners can enrich the quality of the learning experience without having to rise to the level of SME interaction i.e. contributing UCG).

Learners can passively contribute to the quality of learning delivery through the tracking of their actions and behaviors as they interact with a set of modular, blended (mixture of formal and informal) content. . In addition to these passive methods, there are a number of active modes of learning engagement to improve the value of learning content and improve social learning outcomes. Other ways include the user generated creation of extended content metadata, including reviews, tags, content ratings, recommendations / forwards, and so forth. A brief summary of some of the types of data that can be gleaned from learners to refine the nature or delivery of learning content is provided below.

Passive Contribution	Active Contribution
Content navigation paths	Reviews
Time spent on a learning content asset	Tagging / linking
Number or type of content plays	Ratings
Abandons (leaving asset before its completion)	Recommendations

By applying rigorous techniques to capture and, more importantly, leverage both passive and active feedback collected from learners, learning organizations can fully leverage the compelling power of UGC in social learning.

Optimizing for "Just in Time" Delivery

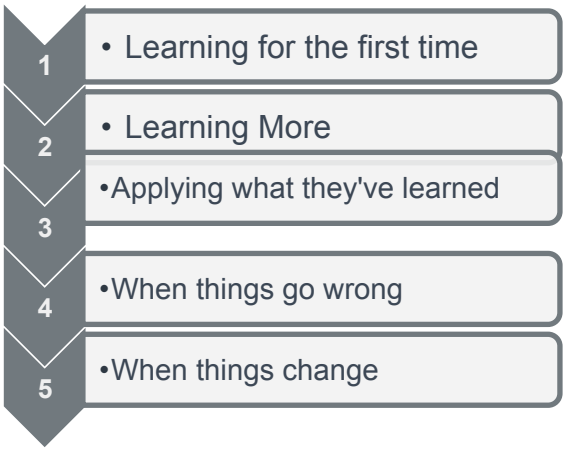
One of the most significant developments in the delivery of training has been the shift from pre-emptive training, in which learning occurs in anticipation of a need that may not yet be manifest, to a "just in time" (JIT) delivery model in which learning occurs as close to the moment of need as possible.

This evolution has been driven primarily by two factors – first, the cost advantages inherent in training only when it is needed, and second, the improved performance of learners utilizing information that they have recently acquired rather than recalling information that they may have been exposed to weeks, months, or even years prior to the point of need.

Targeting Performance Support

Gottfredson and Mosher describe the most commonly encountered learning contexts in their "5 Moments of Need" framework:

Social networks are quickly becoming the de-facto performance support platform form SME's to deliver targeted information to learners.



While formal learning adequately addresses the first two moments, training organizations have historically struggled with the other three moments. As a result, corporate training is making the shift to JIT models such as on-the-job and on demand learning at the point of performance. Given the predominance of JIT learning (which more closely resembles informal than formal learning), we are discovering that social media are extremely effective in reaching learners in their preferred environment, through the proper context, and at their time of need. Therefore, social networks are quickly becoming the de-facto performance support platform for SMEs to deliver targeted information that meet these last three moments of need.

Charles Jennings of the Internet Time Alliance calls performance support the silver bullet for training, where learners are guided via relevant nuggets of information delivered at the point-of-performance. Jennings uses the analogy of a traditional map versus a Global Position System (GPS) device. A map, like formal learning, lays out the entire journey before it has begun whereas GPS, like performance support, guides the user incrementally -- therefore making it easier to navigate en route.

Using this analogy, learning organizations need to rapidly and cost-effectively create personalized content (based on learner roles, profiles, situational context, etc.), leverage relevant UGC, and distribute this integrated formal/informal learning content through the delivery channels desired by their worldwide learners / customers. This ability to deliver blended, contextually relevant learning content on demand is critical not only to reducing the costs associated with training, but to maintaining and extending an organization's competitive advantages.

The fact is that social media applications, including mobile, are inherently designed to leverage small reusable content components for incremental guidance highlights that many of underpinnings of learning objects are still valid and relevant in the social media realm, but need to be taken a step further via XML-enhanced user-generated content and a more systematic approach to social media content development, characterization, and delivery.

Automate Key Tasks to Ensure Flexible Delivery

Informal content, between learners and the paths they choose rather than paths that are chosen for them, are clear. A social media strategy may make good sense conceptually, but in order to function in a real world learning organization a number of issues must be addressed to make the blended content, social learning vision a practical reality.

Specifically, infrastructure investments are needed to facilitate the free flow of content and metadata to and from learning systems, enterprise content platforms, social mediums, and learners.

Some of the infrastructure challenges that can be readily addressed through automation include:

- **Content transformation:** Ensuring that content management and delivery systems can provide the transformations and renditions required to meet the access and ubiquity goals described throughout this document with minimal human intervention is key to a sustainable blended content social learning capability.
- **Content capture and dissemination:** Providing the integration framework to learning organization applications, relevant social media sites, and other UGC venues through third party APIs (and potentially through custom development) to facilitate the multi-directional flow of content and metadata is a necessary precondition to an effective social learning strategy.

By ensuring that these otherwise labor-intensive tasks are streamlined through the use of automation, learning organizations can better reap the benefits of social media-powered eLearning without the significant labor overhead associated with manually moving content and metadata between platforms.

Ubiquitous Availability

The accessibility, scalability, and portability of learning content (whether UCG/informal or formal) is critical to its effective delivery in the age of social learning. As such, 21st century learning is evolving toward a model that relies on almost ubiquitous availability through flexible learning clients, always-connected devices, and readily transformed text and rich media content.

Since the expectation of ubiquity is either here or almost here for millions of social learners, organizations should prepare for it. By building content, process, and systems infrastructures capable of supporting this always-on model of knowledge delivery, learning organizations can enjoy the benefits in learning outcomes described throughout this paper.

Conclusion

The UGC revolution in social learning signals a power-shift in which control of the learning process is moving inexorably from being the sole domain of learning organizations (and of publishers of content more generally) to being instead a shared dialog with more autonomous, empowered learners.

User-generated training content is here to stay, is growing, and has the potential to eclipse the role of formal training content. By enacting a proactive knowledge strategy that recognizes and adapts to this growing trend, learning organizations can achieve better outcomes, provide much-needed support for their parent organizations, and ensure their continued relevance in the face of a growing content wave triggered by the social media explosion.

About Xyleme

Xyleme, Inc. is the leader in standards-based learning solutions that enable the personalized delivery of training content. Xyleme's suite of products is powered by Xyleme LCMS, a 100% XML-based single-source platform. It provides the industry's most efficient content development platform for the rapid reuse of content across all types of print, eLearning, tablet and mobile outputs.

The Xyleme™ product suite also includes Bravais™, Xyleme's cloud-based solution to deliver personalized learning to any device. Pastiche® is Xyleme's end-to-end solution for rapidly deploying interactive and privately branded iPad or Kindle Fire apps.

The adoption of the Agile Development framework enables the release of new Xyleme LCMS, Pastiche and Bravais versions every three months compared to the industry standard of 12 to 18 months.