CogniLore
INFORMATION SOLUTIONS

White Paper

5 major challenges

to leveraging your structured content investment and delivering technical publications to today's mobile platforms

Introduction:

Mobile and Digital are the New Expectation

Over the last two decades, corporate technical communication organisations within many product companies have invested heavily in migrating their content away from proprietary authoring and publishing tools (e.g., MS-Word, Adobe FrameMaker, etc) and implementing the structured XML standards like DITA or S1000D for content markup. These companies have invested millions of dollars into content conversion and implementation of XML-based authoring and component content management systems (CCMS). In many ways, these XML implementation projects have proven to be hugely successful, particularly with regards to content reuse and reduced cost of localizing content to multiple languages.

However, one promise of XML has often fallen short: the goal of true "single-source publishing." The majority of technical communications groups are still publishing to print as their primary output format, followed by online help, and in some cases, eBooks. **But, one major gap is still present for almost all technical publishers: automated publishing to mobile devices for their content users**. Even though smartphones and tablets have dominated the industry for the last two decades, there is virtually nobody publishing content in a way that fully utilizes the native capabilities of these

Did You Know?

- Users worldwide spent an average of **4.2** hours per day on their mobile devices, with **91%** of that time spent in mobile apps, with the average user using just over **30 apps** per month. This suggests that while users are spending more time in apps overall, they are also becoming more discerning about which apps they use and how often they use them.

  (App Annie, March 2020)
- average time to develop a mobile app is around **4.5 months**, with more complex apps taking up to **9 months.** complex apps with advanced features and functionalities can cost upwards of **$500,000 or more**.

  (*GoodFirms, 2021*)
- The average number of connected devices per person was around **6.4** in 2020 and is expected to rise to **7.5** by 2025. This includes devices such as smartphones, tablets, laptops, wearables, and IoT devices.

  (Gartner, September, 2020)
- A survey found that **58%** of companies have a formal **BYOD** policy, while **24%** allow some form of **BYOD** without a formal policy. Another survey by Spiceworks found that **68%** of organizations allowed **BYOD** in some capacity, with **35%** allowing all employees to bring their own devices and **33%** allowing only certain employees to do so.

  (TechRepublic, April 2022)
- **98%** of employees use a smartphone for work-related tasks, while **93%** use a laptop or desktop computer, and **60%** use a tablet..

  (TechRepublic , April, 2022)

mobile devices. Instead, they are settling for the inherent limitations of PDF, or they are using primitive and often expensive eReader software solutions based on formats such as EPUB, Mobi, KF8, or HTML.

Given that this content is a direct point of contact with customers and clients, settling for "virtual print" replications will shortchange the level of effort and expense invested in this content.

This paper will outline five digital content delivery challenges and present solutions to help technical publishers to go "**the last mile**" to fully leverage your XML investment and deliver valuable, high-performance content to popular mobile device platforms like Apple iOS and Android. It will seek to help you to answer the burning question:

Why aren't traditional eReaders or PDF the best choices for delivering XML content to a mobile device?

Five Major Challenges Related to Digital Delivery of Technical Content to Mobile Devices

In the world of consumer trade books and magazines, digital delivery of eBooks to mobile devices has flourished. On the surface, using PDF or the traditional EPUB standard (or MOBI for the Kindle platform) would seem like a logical destination format for publishing technical manuals to these devices.

However, there are some major differences between reading a fiction novel and reading a technical manual...and these challenges expose some severe limitations of the traditional eBook platforms for delivering technical content.

1. Technical Publications Are Often Large and Complex

The Challenge

It's relatively easy to store and read trade books and magazines on a mobile device. They are typically small publications that are easy to navigate, and people usually read them from cover to cover in a linear fashion – one page at a time. Technical publication collections are another matter – in print form, they commonly consist of several volumes and comprise several thousands of pages.

In addition to sheer volume, most technical publications also require sophisticated layouts, with constructs such as large and complex tables, math equations, footnotes, sophisticated hyperlinks (both internal and external), and more. By comparison, the majority of consumer eBooks are merely an electronic representation of a very simple printed page (mostly text, sometimes accompanied by an occasional illustration or small table/chart).

Furthermore, many technical content consumers would also greatly benefit from the inclusion of external media assets, such as:

- The provision of supplementary video, audio, AR, VR or extended content in common formats (Word, PDF, Excel, etc).
- The ability to navigate to fully functional external websites without leaving the app.
- Support for the creation of Applets to enable the creation of interactive tests/quizzes to determine mastery of the content.
- The ability for users to complete forms, reports or inspections with real time interaction with their company and its customers
- Interact with other users in the platform to feedback intelligence on product or process innovation via TIPS
- Feedback critique / request for editorial change on the relate publication
- Support for participation in user forums or groups

Solution: High Performance Navigation and Extended Content Features in CogniLore's proLibro™

CogniLore engineers understand that users need to get to the answers they are looking as quickly as possible, regardless of the content volume. Only in this manner will the content integrate itself into the client's work – anything that slows them down will be quickly dismissed.

proLibro achieves high performance navigation using a variety of features:

- **CogniFlow™ dynamic continuous scrolling** replaces pagination and allows content to always be viewed in the context of the text that precedes and follows what is onscreen, using HTML5, CSS3, and JavaScript standards.
- A **Table of Contents Panel** that shows the structural breakdown of the hierarchy of the content allows users to quickly drill to the topical locations desired.
- A tap on the **Navigator Scrollbar™** allows users to easily view a slice of the Table of Contents, presented hierarchically for easy orientation.
- A continuously updating **History Panel** tracks a series of key activities performed by the user through their use of the product.

proLibro View™ Apps also feature the **Media Panel**, a viewer that delivers an extended content experience to your clients. This flexible construct delivers extended content using **video**, **audio**, **PDF**, JavaScript **Applets**, and even the display of fully functional **websites**.

For more information regarding **proLibro** please contact CogniLore at sales@cognilore.com.

Where PDF and Traditional eReaders Fail

Slow Performance on High-Volume Titles

High-volume content collections present challenges for PDF or traditional eBook readers, which generally must load the entire title into memory. The memory limitations of these devices make it impractical to load what are commonly thousands of pages of content into a

reading app for browsing content. At best, navigation performance slows...at worst, the app (or possibly even the device) will crash or prevent the download of data.

"Virtual Print" formats – Lacking Vision

Despite having tremendous amounts of computing power now available to us in the palm of our hands, PDF or traditional eReaders rarely enable publications to transcend beyond what is normally found within the boundaries of print or "virtual print" technologies. Typical eBook readers weren't designed to deal with complicated content, and viewers for the PDF formats, which were originally intended to create a perfect screen replication of a printed page, can be cumbersome to navigate on smaller screens.

Recommendation

Seek out Interactive Electronic Technical Manual (IETM) applications built specifically with research and reference in mind. An IETM of this type will feature highly responsive and flexible navigation options across all potential media consumption devices.

2: Rapid retrieval of relevant content

The Challenge

In general, technical publications or reference products have significantly different use cases than trade publications, such as novels or magazines. People generally read trade publications are generally read from beginning to end in a linear fashion, and often in a casual manner. On the other hand, people use technical reference publications to find specific information needed to answer a relevant question or to perform a task. They are not intended to be read from front to back in a linear fashion. A user accesses a technical publication to find the answer to a question or to learn more about a specific topic. In order to perform these tasks efficiently, tools must be provided to the user – and key among these is a responsive search capability.

Solution: proLibro IETM Apps deliver Powerful Search Features

When accessing specific information topics within a large collection of content, it is critical to have professional grade search capabilities at your disposal. proLibro **IETM Apps** feature an **advanced and lightning-fast search engine** to rapidly find the information you seek.

Results for searches of any type are sorted using proLibro's **advanced relevancy ranking algorithms,** so that the most pertinent results are rapidly presented in order, floating the best candidates for your search results to the top of the list.

In additional to support for **Boolean**, **wildcard**, **proximity**, and **phrase** searching, proLibro also features support for highly flexible **contextual searching**, allowing you to define and implement new topical searches that are custom-fit to your content, making it even faster and easier for content consumer to find what they are looking for.

For more information regarding **proLibro** please contact CogniLore at sales@cognilore.com.

Where PDF and Traditional eReaders Fail

Simple Keyword Searches Don't Cut It for Tech Pubs

Most reading apps, such as Kindle, iBooks, or any of a host of PDF format eReaders will typically only provide basic keyword search capabilities – the software will search for exactly the characters that have been presented, with few exceptions. This type of query often provides a large quantity of search results, without regard for sorting the results according to the relevance of what the user is looking for, and will often be very slow, particularly with high volume content collections. This primitive functionality forces the user to sift through a massive list of false hits in order to find the most relevant content. The result: time-consuming user experience, lack of focus, and, again, increasing client frustration.

Recommendation

Utilize IETMs that recognize the importance of high performance and advanced search capabilities that will allow you customers to quickly find the information they are looking for – even with content collections consisting of thousands of pages of content.

3. Frequent content updates

The Challenge

Users turn to technical publications and reference materials to ensure that they are current on a particular subject matter or to make critical decisions. In a rapidly changing world, these publications are highly dynamic, changing frequently to ensure currency. This can range from ensuring that users have access to the latest procedures for troubleshooting issuers to validating regulatory compliance for engineers working on highly complex and mission critical machinery.

For technical publications (particularly for companies who have invested in a XML-based approach to component content management), there is usually a business objective to release updates at the topic level. Portions of the content will continually be updated over time, and it is desirable to be able to view the differences between versions.

Ensuring that users have the most current content in hand can represent both a significant costs savings (due to reduced support requirements), as well as a key competitive advantage as a competitive differentiator in delivering service to your clients.

Where PDF and Traditional eReaders Fail

"Virtual Print" – An All or Nothing Approach to Updating

Following in the footsteps of the trade publications upon which they have been modeled, traditional eBook readers and PDF readers fail to incorporate updating as a part of their core functionality. After all, the latest New York Times bestseller never needs a content update.

Professional grade content, including technical publications and reference manuals often need regular updates to reflect new features or discoveries. This is one of the core reasons for the application of XML or XML based Content Management Systems – to ensure that content can be updated at a topic level, in a manner that will allow for the management of different versions and updates.

The only option for updating collections that have been produced using traditional eReader systems or PDF is to completely regenerate the product. However, if users have taken advantage of any of the annotation features found within some of these eReader products, they will be faced with replacing their existing files or creating a duplicate to which they will either need to refer – or they will need to go through an arduous process of back and forth as they copy their personalizations from one version to another.

Solution: Continuous Updates and User Content Migration with proLibro IETM

As a system designed specifically to support reference and technical content, the proLibro system offers full support for continuous content updates.

Updates are generated and transmitted to users using the cloud-based proLibro *Connect™* system, offering content owners complete control over their generation and distribution.

Upon receiving updates, user personalizations will automatically migrate to the new version. Using proLibro features such as the Media Panel, JavaScript Applets, and Context Searching, detailed descriptions of the changes in updated version can be accessed without affecting the consolidated presentation of your content.

In addition, updates can also be flagged as mandatory, ensuring that users have the most current material in situations where safety is an issue.

For more information regarding or a demonstration of **proLibro** please contact CogniLore at sales@cognilore.com.

OK, I Have a New Version – What's Changed?

As the changes that exist between versions can often be voluminous, a user receiving an updated version is often faced with the question of "what's new"? Often, content producers attempt to answer this question through the use of printed lists, such as revision histories or publisher's notes. Even when hyperlinks are made available to bring the user to the location of a change, they will often be confused as to the specifics of what content has been changed, necessitating some back and forth between two different files to try and figure out what the differences are – and then often end up contacting your tech support department for more information.

Recommendation

Your content is regularly updated – find an IETM system that can roll with those changes and provides the ability to push out content updates that are automatically integrated into your content collection. Don't forget to ensure that these updates will fully support the migration of the user personalizations such as annotations, highlights, bookmarks, or history. An advanced eReader system will also incorporate tools that will allow you to provide your users with detailed information on what has changed between versions.

4. Multi-platform support

The Challenge

Users today work on multiple devices over the course of their working day. They may work on a Windows PC in the office, take an iPad to a meeting, and view some content on their Android phone at lunch. And increasingly, Bring Your Own Device (BYOD) policies exist within many workplaces, resulting in a broad collection of devices and operating systems that may exist within a single office.

For content production and distribution, this diversity presents challenges:

- As workers now face multiple screens over the course of a workday, they expect that these devices will remain in sync. The results of the user's interactions with each of these devices should follow them, without the need to tether a device to a computer or to manually invoke a sync event.
- The proliferation of different types and brands of devices – smartphones, tablets, laptops, and PC – and the varied operating systems required to support them present a development and support challenge. To provide users with maximum productivity, it becomes critical to ensure that your content presentation and the user interface will remain consistent and familiar to users across all platforms, whether they come from Apple, Samsung, Google, Microsoft, or any of a myriad of other potential suppliers.

Where PDF and Traditional eReaders Fail

Traditional delivery platforms generally act as content islands, as they haven't been designed to enable the user to automatically synchronize bookmarks, annotations, and other useful information in an automated fashion across multiple devices and operating system platforms. This creates a schism in the user's expectations relative to their additions to the content (their personalizations) and what they can expect to find on their devices. This lack of automated synchronization leaves them with a choice of either trying to manually keep this content in sync, or tying themselves to a specific device, lowering their potential productivity.

In addition, the high volume of devices, operating systems, and apps can result in incompatibilities with content across different eReaders or systems, increasing the number of support calls and work required to troubleshoot user complaints, and ultimately decreasing user satisfaction with your end product.

Solution: Integrated Multi-Platform Functionality and Cloud Based User Content Synchronization Found in proLibro

In recognition of the trend toward the use of multiple devices over the course of the knowledge worker's daily schedule, proLibro engineers designed the system from the ground up to support multiple devices and operating systems in a fully integrated way.

proLibro is available across a variety of popular mobile operating systems, including iOS, Android, and Microsoft Windows, ensuring that your users are able to access their content with a consistent, familiar user interface, regardless of the platform on the devices of their choice.

Annotations, bookmarks, and history (user personalizations) are continuously synchronized between these devices via the cloud based proLibro *Connect*™ system.

Since proLibro content is available while either online or offline, offline personalizations are synchronized with the next time the device is connected.

This ensures that users always have access to their valuable reference content – where and when they need it.

For more information regarding **proLibro** please contact CogniLore at sales@cognilore.com.

Recommendation

Ensure that the technologies that you choose to use for content distribution are designed to support user activities across different devices and platforms. Standardizing on a single system and platform can results in a more familiar experience for your users, regardless of the device or system they are using. This will lead to reduced support requirements and increased user satisfaction.

5. The Power of Analytics and Feedback Loops

The Challenge

Traditionally, the activity of creating and distributing content has been analogous to a broadcast. Material is generated and sent out, with very little information coming back to the content owner. If you are a content owner, you are then pressed into attempting to understand how your content is being used through the application of web or phone surveys, or a suspect level of anecdotal feedback that may or may not be representative of the whole.

Imagine the value of having the ability to view and track data on how your content is being used by your target audience. The ability to acquire this type of information is the first step in the creation of a *publishing feedback loop*. With this type of information, you would be able to understand how your content is being used at a very granular level. This knowledge would allow you to spot trends related to consumption patterns or topics of interest that might highlight real-world issues with products, areas where users are having difficulty understanding a product's features, or opportunities for enhancements or new products.

Where PDF and Traditional eReaders Fail

"Virtual Print" Extends Bad Broadcast Habits

Print, PDF, or traditional eBook delivery tools merely extend long entrenched "broadcast" publishing habits, without taking advantage of the potential of digital delivery mechanisms to provide highly detailed data back to the publisher for further action. At best, you are able to get high level information regarding product downloads or information regarding the regions by which they were accessed. You might even be able to tie user logins to specific downloads. But, what happens after those transactions have been completed remains a mystery with traditional "virtual print" technologies. Ultimately the information and data that you receive is no better than it was for traditional print distribution mechanisms.

The Great Digital Barriers

Even worse, if you choose to distribute using 3rd party eBook distribution systems such as Kindle, iBooks, or Kobo, you quickly discover that these major players place themselves between you and your clients, presenting a gap in the amount and precision of information that flows to the content owner. As a result, you have only the broadest understanding of the distribution performance of your products, and none of the details.

Recommendation

Ensure that the technology that you choose to distribute your content is capable of the following:

- ***Tracking which sections in your content are most frequently accessed, or which topics are rarely (or never) accessed.***
- ***Generating a weighted list of the most frequently used search terms within your titles by version or time period.***
- ***Identifying which sections are most frequently annotated with highlights, bookmarks, or notes.***
- ***Providing tools that enable your users to send feedback for a specific topic directly from within the app.***
- ***Integrating with online user forums or websites without leaving the application.***

Solution: Get Detailed Usage Data Using proLibro IETM

proLibro is the first system with the ability to provide you with such detailed insights into how your content is being used at a highly granular level.

Discover information related to your distribution of content including statistics related to fulfillment levels and time spans, time spent within a title, frequency of use, and update or version distribution.

Get a powerful understanding of how your content is being used – identify the most popular content segments by view or annotation, generate term clouds consisting of the most popular search subjects or terms that have been used in annotations or highlights, or see which external links are triggered most often. Best of all, with the ability to create your own JavaScript Applets, you can extend these capabilities to generate new data points of interest to your particular organization.

For more information regarding **proLibro** please contact CogniLore at sales@cognilore.com.

Case Study: Technical Publications Division of a Large Multinational Manufacturer

The Challenge

This organization made a decision in 2013 to move away from their proprietary authoring/publishing environment (based on Adobe FrameMaker and Robohelp) and migrate their content to a standards-based environment based on XML. The business objectives for this move were to:

- increase content reuse at the topic level
- automate their business processes with workflow tools
- improve their version and access controls
- reduce translation expenses
- enable "single-source publishing" to multiple output formats

It took longer than expected (approximately 2 years) to fully migrate into their new XML-based environment, consisting of a XML authoring tool and a component content management system. They mostly succeeded in achieving their business objectives and have seen many of the promised results related to content reuse and lower translation costs.

However, the vast majority of their output is still primarily focused on delivering print/PDF, followed by web-based online help. In the meantime, their user community has evolved, with many users looking for the ability to easily find relevant content on their mobile devices. The current XML environment was not optimized to support this new mobile content paradigm in any type of automated way.

The Solution

In 2019, the organization did a trial project using CogniLore's proLibro delivery platform. Their content management system was customized to be able to create a transformation of XML content that could easily be ingested into proLibro. Now, within minutes, they can produce a fully functional IETM that is optimized to run natively on Apple iOS, Android, and Windows platforms...with sophisticated search technology, automated synchronization across all platforms, and the ability to gather valuable metrics from their user community.

The Results

This organization has converted all of their documentation over to the proLibro platform. Users are extremely happy with the versatility of the new documentation offerings. And, the technical publications management team has a much clearer view of how the user community is accessing and utilizing their content, which they expect will help them to improve the quality of their deliverables and strengthen the companies brand.

Conclusion: Go the Last Mile!

Technical publications organizations have seen many productivity benefits from migration of their content creation environment to a XML-based platform. But, there is still room for improvement when it comes to delivery of this content in a way that best meets the needs of their end users. There is a growing demand for access to relevant content on mobile devices...and the traditional PDF and EPUB tools are not sufficient for the job. It's time to go the last mile to bring excellence to your content delivery...or risk running out of fuel!

About proLibro

Your content is an extension of your brand – no matter how much you have spent on content management systems and training, ultimately your content is where you connect with your clients. Give them the best experience and tools to put that content to work – proLibro.

CogniLore's proLibro™ is the first digital delivery platform designed specifically to support the unique requirements of complex and high-volume reference content.

Reference content is essential for professionals of all types – whether engineers working with detailed specifications or product data sheets or members of professional industries including legal, medical, accounting/tax, science/technology, human resource, and business sectors.

All of these users have a common requirement – they need to know that the information to which they have access is accurate and up-to-date. Increasingly, they expect their content providers to ensure this accuracy.

proLibro is a complete package that allows you to deliver on your content promise. A complete collection of eReader Apps for all platforms work in an integrated fashion to allow users access to your content and their personalizations where and when they need it. Best in class navigation and search capabilities enable your users to get the information that they need to support critical decisions and actions. Support for common standards, built in Applets, and extended media mean you can present your content exactly the way you want, with the knowledge that it will present the same way across every device, every time. And with complete support for continuous content updates, your users can be confident they always have the most up to date material at hand on which to base their decisions.

The complete proLibro system can be fully white branded, enabling you to rapidly create a custom app presence at a fraction of the cost and time to create your own custom content application – with the complete backing of CogniLore's professional engineers to ensure that your applications remain current and fully tested on new platforms and operating system updates as they are released. This enables you to focus on creating great content while we focus on the need to create and support the amazing software that will handle the delivery of that great content to your users. proLibro even supports an authentication API that can connect to your existing authorization systems, allowing your users to maintain their existing user names and passwords.

For more information on proLibro, or to setup a demonstration of how proLibro can be applied to your content assets, please contact sales@cognilore.com.

About CogniLore

Since 2000, CogniLore Information Solutions has specialized in the development and delivery of e-publishing systems designed to support the sale of commercial business information. We provide complete solutions to for digital delivery ideally suited to engineering, legal, medical, sci/tech, or business reference products or publications on any platform.

At CogniLore, our passion revolves around finding better ways to keep clients informed. With over 20 years of experience, CogniLore is the go to resource for a host of major publishers, industry associations, governmental departments and agencies, and companies in bringing their content to their clients using best of breed digital delivery solutions. Our solutions resolve the hidden functionality, distribution, security, and value challenges involved in publishing massive collections of frequently updated content. Our multi-platform solutions provide information professionals with fast access to their content whenever and wherever they need it.

Your content is a key point of contact between you and your clients – by working with CogniLore you are ensuring that you are offering them the absolute best of breed digital delivery solutions.

If you have a product that you would like to bring to the proLibro system or any other e-publishing format targeted at web, PC, tablet, or mobile platforms, please contact us by visiting our website at www.cognilore.com or by e-mail at sales@cognilore.com.