



## Content Conundrum: Remaking the Value Chain

### Executive Summary

The global information and publishing industry is in the midst of a digital revolution that is transforming the face of this business segment. The rise of the millennials and their quest for anytime, anywhere content, as well as a multitude of technology advancements, are reshaping the core business of information dissemination. This is forcing information providers and publishers to realize that digital content consumption differs greatly from the consumption of print content and to reexamine how they manage their content supply chains.

These developments – most notably, the increasing availability of free content, the primacy of search as a revenue model, a growing emphasis on content monetization and the ability to render content in multiple formats across multiple devices – are redefining the way information providers and publishers conduct business. The propensity to continuously improve the management of content assets, while maximizing its monetization potential, is reaffirming the adage, “content is king.”

As market demand for enriched content increases, publishers are looking at better ways of optimizing their content supply chains. The progress has been slow, and the path has been riddled with inherent pain points, including:

- Print-centric content workflows are not optimized for digital, mobile delivery.

- Legacy/disparate systems are leading to data latency, inhibiting real-time content delivery.
- Multiple content conversions are required to deliver standardized content across multiple platforms.
- The digital-first strategy requires better taxonomy management and an improved underlying information architecture.
- There is a need to make content “smarter,” add semantic capabilities, improve search and boost opportunities for monetization.
- A lack of IT-BPO synergy exists between technology and content services to aid faster time-to-market and continuing advancement of automation.

### First-Mover Advantage

The industry has responded positively, with leading publishers in segments such as scientific/technical/medical (STM), education, books and newspapers building capabilities to offer better differentiated content. By reengineering the content supply chain, the industry intends to reap additional benefits that include:

- Creating new revenue models out of existing content assets.
- Meeting changing consumer content interactions.
- Making one’s content accessible to the right consumer at the right time for the right outcome.

- Speeding time-to-market.
- Lowering “transaction” costs.

With the focus of the content business shifting to digital, the race is on to offer differentiated content in niche areas, leading to a significant surge in volume. Publishers across segments handle large volumes of unstructured content that must first be standardized in media-neutral formats.

Added to this, publishers are also looking at monetizing their legacy archived content, which means going beyond generic PDF conversions, to converting legacy content to XML and tagging each asset in order to enhance search and monetization opportunities. Redigitizing backlisted titles has opened up new growth vistas for book and education businesses, most notably at companies such as Pearson and Wiley.

### Content Strategy: Why Now?

The digital transformation sweeping the industry is led by the proliferation of e-readers, tablets and smartphones that are wirelessly linked in real-time to global content stores and supply systems. At the core, XML repositories and newer technologies are altering the way content is stored and consumed today. These changes in consumption and storage patterns have created a ripple effect, translating into changes in the way content is acquired, processed and enriched. The ripples have impacted the initial areas of the content supply chain, most notably in content architecture and enhancement, underlining the growing relevance of taxonomy management and effective metadata tagging and their direct correlation to search.

While publishers and content service providers (or content BPO companies) previously partnered in the content production process, today content publishers need “knowledge partners” that, in their quest for market leadership, will apply the necessary domain expertise and best practices.

Traditionally, content publishers and IT service providers have been strong in the content storage and delivery areas. The developments caused by the aforementioned ripple effect are blurring the fine line between IT and content BPO services and accentuating the move toward smart content and tighter IT-BPO synergy.

## The Content Lifecycle: What the Future Holds

In a print-centric world, the publishing process – from product envisioning and content authoring, through distribution – was split into four distinct segments: author, production, storage and delivery. Today’s changing market dynamics, players, processes and systems require publishers to rethink their content generation, storage and delivery strategies, as well as reassess the underlying tools, technologies and processes that power them.

Maximizing returns on content assets requires content publishers to view the “production” segment as not merely a content services play but a combination of the architect, structure, enhance and produce stages. These segments, along with the author stage, will not necessarily be sequential in order but will flatten and intermingle, depending on the publisher and the final product. The new content supply chain, hence, needs to be seen as a seven-stage process (see Figure 1), as follows:

1. **Author:** This stage includes content acquisition, authoring and ingestion, as well as product development. Interactions are managed between the publisher and the author(s), and in some cases, multiple information channels are applied.
2. **Architect/Design:** In this stage, XML schema and document type definition (DTD) with taxonomy definition and the underlying information architecture is designed or applied. Taxonomy (i.e., classifying content in a hierarchical structure) and XML schema design will become a key focus area, as publishers seek to make sense of the growing volume of social-media-derived, unstructured content and offer content products to their readers.
3. **Structure:** Essential format conversions are managed in this stage. This is important, given the multiple sources and formats of content acquisition, as well as the market-driven demand for content delivery across different formats and platforms (e.g., PDF to XML, XML to HTML5, XML to NewsML, etc.). The explosion of e-readers and devices, each with their own proprietary format, further increases the importance of content structuring.

4. **Enhance:** Here, publishers enrich content and add value through metadata tagging, linking similar articles and indexing, providing the framework for linking content and related items. Entity extraction, resolution and linking make the content “smart” and are increasingly an integral part of the content provider’s information landscape.
5. **Produce:** This stage includes content service areas, which can be viewed as a set of commoditized activities, such as typesetting, paginating and proofing.
6. **Store:** In the storage stage, binary and non-binary content stores are created, as are XML repositories and digital asset management products, providing enhanced search capabilities. Search is increasingly used as an information discovery tool across segments and is the new revenue stream for many information and content providers.
7. **Deliver:** This final stage includes the need for capabilities to render content in print, online,

mobile, smartphone/tablets and multimedia delivery platforms.

In addition, content publishers need to look at four key horizontal components that will form the new content supply chain across the aforementioned seven segments:

- **Knowledge Layer:** A core understanding of their industry domains, such as STM, education and legal, as well as the latest technologies and tools, are essential for creating the underlying information architecture, linking data, metadata tagging and better taxonomy management.
- **Technology Layer:** Technology know-how is needed to develop applications and build APIs, adapters, product implementations, enhancements and support.
- **Product Layer:** Capabilities across a multitude of product areas are required, including authoring tools such as the Adobe suite of products; editorial workflow products and tools such as Atex, K4 and Woodwing; CMS products such as Documentum and eScenic; and XML repositories like MarkLogic.

## The New Content Lifecycle

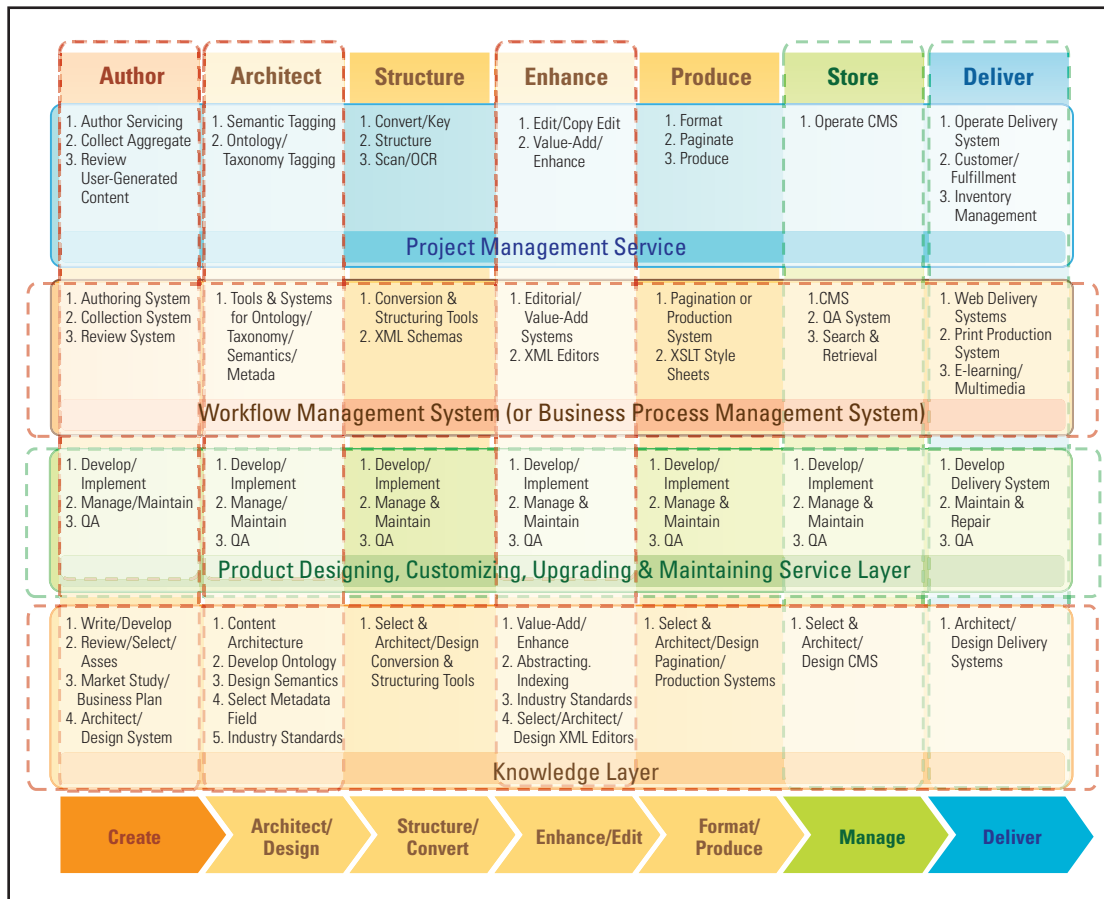


Figure 1

- **Services Layer:** Traditionally managed by content BPO providers, this layer will manage the content production processes, from copy-editing to pre-press.

## The Publisher of Tomorrow

By adopting a seven-pillar/four-services matrix, content publishers can embrace a more collaborative publishing ecosystem and eliminate the siloed and legacy-systems-dominated world in which many content publishers live. In this model, greater emphasis is given to XML schema design, taxonomy management and dynamic content management, which encompasses automatic metadata tagging. In sum, this approach not only helps content publishers overcome a lack of coordination that exists between current IT and BPO providers, but it will also help content publishers enhance the value of all content assets.

Moreover, with increasing market appetite for custom content and the emergence of micro content monetization, publishers need to create smaller nuggets, or bite-size content, by breaking down and packaging text into its smallest minimum form as words, chapters, images, graphics, etc. Knowledge partners can help publishers deconstruct, reassemble and monetize custom content packages based on user demand.

Enhanced content monetization cannot be accomplished without precise tagging of content assets. While custom content publishing is prevalent in the education sector, newer segments – such as information, news and even information intermediaries – are waking up to this opportunity.

A publisher's content strategy is not about legacy modernization or new product implementation; rather, it should encompass a whole

set of activities designed to maximize returns on content assets. This includes redesigning the information architecture; conducting assessments around the current state of the content business and underlying systems; and performing a structured content audit to unearth hidden assets and marketability of current assets to maximize existing revenue streams.

A recent consulting assignment at a large UK-based magazine revealed that minimal tagging of content within the magazine's Web site and lack of connection between the magazine's content assets were directly impacting revenues, as sales teams found it difficult to drive content monetization across various aspects of its online presence.

Another engagement revealed that by hyper-linking and directing traffic to its "group" site, an information publisher with a multi-product portfolio could enhance content-driven revenue streams and create additional cross-sell and up-sell opportunities. Hyperlinks from free sites and newsletters can help information providers generate new revenue streams by driving additional traffic to their paid sites, where premium content can be served and monetized.

As content providers embark on this journey, a knowledge partner with the right mix of technology, domain, product and services skills can offer the experience and insights needed to implement the process and technology transformation needed to fulfill content providers' aspirations of providing enriched, niche and world-class content to their end consumers.

## About the Authors

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