

| Managing information
in the digital multiverse

I Introduction

We live in a world driven by information. Consumers expect fast and easy access to content from many different sources. As well as the “traditional” media of print, TV and radio, they naturally expect to be able to find information via the web, social media and mobile - and get frustrated if they can’t. From a business perspective, customer satisfaction is closely related to the timely availability of up-to-date, reliable information.¹

But managing large volumes of diverse electronic content is difficult. Neither is it just a problem in the business-customer relationship; a business’s resellers expect to be able to integrate content without performing laborious manual conversion. Humans cannot cope accurately with the volume of information involved in modern business data systems, because “the machines we have invented to produce, manipulate and disseminate information generate information much faster than we can process it.”²

Technological diversity is part of the problem, but not the whole of it. Underlying the technological challenge of content sharing is one that is, in some senses, even more difficult: that of different organisations (and often divisions and departments within organisations) using different methods of sharing, managing and publishing data at an organisational level. Those methods might fall into one of two categories:

1. **Systems-based** - where information flow is managed around a hierarchy of individuals and groups within an organisation, with information transition being a combination of digital, hard-copy and personal communication.
2. **Application-based** - where information is shared digitally via a content management system or database, over a digital medium such as the web or an intranet.

To put it simply: there is no single, universal, semantic system for sharing information between content repositories, digital platforms, content management systems, in-house stakeholders and consumers.

As such, we are not yet operating within an information universe that has consistent standards and laws. Rather, we are at an intermediate stage where different information technologies and content management systems adhere to different standards that are only transferable to varying

degrees. We call this the digital multiverse - an environment in which information is available in large volumes, but via an array of platforms, standards, management systems and applications.

This environment poses a series of challenges for organisations that provide and/or manage content, and we’re still at the stage where those problems are increasing rather than levelling off. Information needs to be up to date and valid across tens, hundreds or even thousands of different media. In most cases different sources are managed by different people: content managers, product managers, editors, marketing coordinators and resellers’ staff. More sources mean more manual work; more manual work means more mistakes; more mistakes multiplied by more sources leads to an endlessly growing, self-perpetuating loop of mistakes in the information chain.

In other words, a limited number of error-prone information managers have to deal with a seemingly limitless volume of data across non-compatible systems. The inevitable errors that happen in that situation result in overspent budgets, damaged brands and frustration for consumers, information managers and organisational leaders. As the authors of one research paper put it:

Consumers want exactly what they want, when they want it, and they want it packaged to meet their individual needs. [...] Also, the sophistication and complexity of customized products, services, and systems can result in more frequent and costly order errors if manual order entry systems are employed. This can be further exacerbated by the rapid proliferation of sales and distribution channels, increasingly complex products, and the rise in customer demand for a time-efficient ordering process.³

In this white paper we’ll focus on problems related to managing the whole process of information flow to all destinations from one source, making the process more transparent and releasing the resources spent on meaningless update processes by replacing them with a single workflow system containing a coherent and logical set of standards.

1 McKinney, V., Yoon, K. and Zahedi, F. “The Measurement of Web-Customer Satisfaction: An Expectation and Disconfirmation Approach.” *Information Systems Research* 13.3 (2002) 296-315

2 Edmunds, A. and Morris, A. “The problem of information overload in business organisations: a review of the literature.” *International Journal of Information Management* 20.1 (2000) 17-28.

3 Oppong, S.A., Yen, D.C. and Merhout, J.W. “A new strategy for harnessing knowledge management in e-commerce.” *Technology in Society* 27.3 (2005) 413-35. Oppong et al. offer an excellent overview of the problems of data proliferation in online business.

Solving the problem: some approaches

Solving the problem of product information management is complex. **It has to include the whole chain and take into account workflows on different levels.**

One big part of the issue is related to central product database management tools that have their own workflows. Users that are part of the management process have to have user-friendly tools that simplify their daily routine. In that environment, information flow based on product groups, countries and languages can be controlled relatively easily and conventional formats like .doc and .pdf can be generated based on the same central database. Having such systems and tools in place won't solve the whole problem of information management across a diverse system, but it is a good - and possibly essential - starting point.

The biggest improvement in efficiency can usually be made at the interface between the organisation that is the source of the information and its third party partners, such as resellers and affiliates. Current best practice would be to set up an API or web service from which third parties could retrieve information. That is effective in relatively simple systems, but less so when dealing with third parties who have relationships with a number of different providers. A third party doesn't want to spend time and money building a separate API implementation for each of its partners.

There is an additional level of complexity to consider: international legal compliance. In most jurisdictions third parties have to be able to control pricing information in the workflow before it is delivered to their websites. If there are hundreds or thousands of partners or resellers, it may be useful for larger, multinational brands to offer standardised solutions that are able to read the web service and provide the workflow required by law.

The only solution that is truly effective is one that covers all the links in an information system from technological, legal and commercial points of view, and allows standardisation without forcing expensive adaptations upon third parties. The ideal is a situation in which, when information is changed at source, the same bit of information reaches all the destinations automatically, static PDFs are generated and uploaded, and third party, official web and mobile sites are updated automatically.

In most cases, whether or not such a solution is implemented comes down to cost of making such a shift. Most commercial solutions would not be affordable for small to medium business and their third party partners, since the lead-time on ROI would present cash flow problems.

However, there are many alternative solutions available that can help to resolve these issues.

Modera has enjoyed success helping many clients - some of them major multinational businesses - resolve complex data management issues. Our information product range is wide, and permits the combination of high-end content repository, product information management and extranet systems, with out-of-the-box content management systems.

Our software cycle includes special releases designed around a five-minute installation process for any hosting platform, solving the problem of brand consistency, localisation and accurate product information in tens of countries for thousands of people. We give our client organisations central tools for managing information flow both internally and externally from single content repository.

To view case studies of previous projects undertaken for major brands, please visit <http://www.modera.com/success>