



## Bringing Reusability to the Office Desktop for Ordinary Users



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Having delivered solutions to technical writers, we have been working on a new challenge posed by our customers—enabling ordinary users to get the benefits of single sourcing without changing their skill set.

The desired benefits were crystal clear. More productivity, faster turnaround, and greater accuracy for a variety of staff—including corporate attorneys preparing financial filings, sales staff compiling proposals, and team leaders writing manufacturing instructions.

Unfortunately, our customers also banned all of the paraphernalia in our toolbox. No specialized editors. No software installation on client PCs. No time off work for special training. No special templates or styles. The document equivalent of climbing Mt. Everest in beach sandals.

What could have been regarded as unattainable became a reality thanks to the recognition that the core of single sourcing is predictable, structured content. We were able to attain such content, and deliver the benefits, without specialized tools. See Table 1.

### CONSTRAINTS SHAPE THE SOLUTION

The limitations imposed by real-life customers shape the solution. “No new software” means, in practice, that the solution must work within Microsoft Word. Live Linx has implemented the solution using Adobe FrameMaker as well as Microsoft Word. Since Word is ubiquitous in most organizations, the discussions in this document focus on the Microsoft environment. “No time off work” for special training means that the solution needs to be extremely intuitive. “No special templates or styles” means that the solution must automatically generate structured content from arbitrary inputs, including content that is cut and pasted from other sources. “No IT budget” means that the solution must avoid installation and support of new applications on individual workstations.

### THE LEGO METAPHOR AND BEYOND

We have used Lego building blocks as a metaphor to explain the solution to our clients. Take any plastic Lego piece and it will connect

Table 1. Structured Content for Diverse Users

#### WHEN WRITERS DON'T IDENTIFY THEMSELVES AS AUTHORS

Outside of the publications department you can find many people whose primary job function is writing documents. They could win from single sourcing. And the company could win big. The problem is, the self-description of these personnel never includes “author.” Their resumes never feature the publishing applications they know. They never attend a “tools track” at a professional conference.

Writing structured content is not one of the criteria for winning promotions or bonus pay in the sales, support, legal, or other departments. If the organization is going to get predictable, structured content from these individuals, it must do so indirectly—by making structured content a byproduct of the everyday activities of diverse staff.

#### WHY PREDICTABLE CONTENT COUNTS

Once content will be reused in different documents and published via different media, predictable content is critical. Imagine that you have a paragraph you want to reuse in many documents, but the paragraph has hard-coded formatting instructions for a specific font, indent, or bullet symbol. When the paragraph is included in a document that uses different formatting instructions, the result will be jarring and distracting. Consider a case where the paragraph uses a company name in all capitals but other parts of the document use initial capitals for the company name. Imagine that you want to include the product name in the paragraph but the product name may vary in different documents that host the paragraph.

In all of these cases, and in many more, predictable content is a necessary requirement for successful content reuse.

to any other piece, allowing for total reusability of plastic toy blocks.

Implementing a Lego-type solution for content components requires several techniques on the part of different people:

◆ **Creating and Using Content Building Blocks.**

Staff need to prepare the building blocks so precisely that they will fit, even with components prepared at different times or places.

◆ **Finding Content Components**

Staff need to navigate quickly between thousands of available building blocks, including content components associated with specific versions, dates, or options.

◆ **Publishing Components into Finished Products**

Staff need to assemble the blocks into coherent structures. In the case of content, the finished product may be a sales proposal, an EDGAR filing for the Securities and Exchange Commission (SEC), an internal procedure, or other document.

Content component solutions go beyond the Lego model in several areas:

◆ **Managing Updates on Content Components**

Unlike plastic building blocks that don't change over time and can be used in only one place at a time, content components can be edited and reused simultaneously in many different documents. Successfully managing change in content components is critical to success.

◆ **Publishing to Multiple Formats, Publishing Personalized Content**

Content built from components may need to be distributed via multiple formats, may need to be personalized according to reader profiles, and may need to deliver different functionality on diverse platforms.

### CREATING AND USING CONTENT BUILDING BLOCKS

To enable ordinary users to create content components, we use Live Linx Component

Publisher to create a component from within Word without special software tools or training. See Figure 1. Component Publisher allows users to create reusable content components by selecting text and graphics and then pressing a single "Create Component" button on the Word toolbar.

To reuse a component, users press a single "Insert Component" button on the Word toolbar. Using keywords, relationships, applicability, or search, users quickly navigate to the needed component.

Speed and simplicity help ensure that authors and editors find components fast and help prevent the creation of redundant components.

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#### Stories from the front lines

A pay-TV equipment vendor uses different combinations of hardware and software building blocks to create multiple products. Instead of documenting each building block separately for each product, the writers use Component Publisher to prepare a content component for each building block function and then insert the component in each publication that needs to describe the building block. When the building block gets updated, writers just

*"Using keywords, relationships, applicability, or search, users quickly navigate to the needed component."*

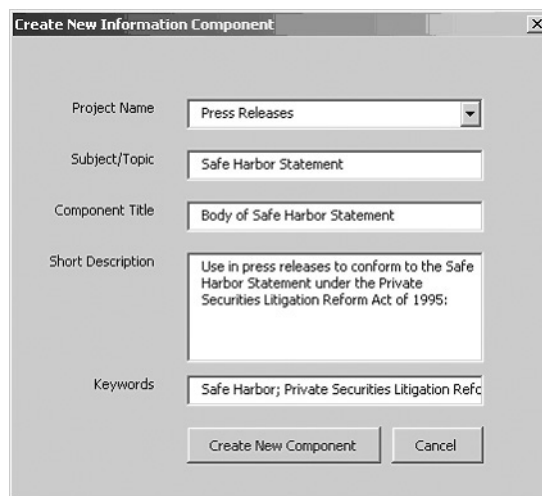


Figure 1. Creating a New Content Component Using Component Publisher

## Ensuring that Content Building Blocks Fit Together Precisely

update the component in one location, and engineering proofreads in just one location. The updated content component may be used in dozens of different products.

### ENSURING THAT CONTENT BUILDING BLOCKS FIT TOGETHER PRECISELY

To meet the goal of preparing the building blocks so precisely that they will fit (in terms of language use, formatting, styling, captions, and other criteria), even with components prepared at different times or places by different people, we use Live Linx Qualidocs to enforce standards on Word documents. Qualidocs is rule-driven. See Figure 2. Different sets of rules may be specified for different types of documents. Qualidocs can be run automatically on documents or activated by the user by pressing a single “Inspect Document” button on the Word toolbar.

In many real-life cases, content needs to be imported to the solution from pre-existing legacy documents or from various and sundry sources working without regular standards. To support these cases, we calibrate the Qualidocs rules to enable automated upgrade to the predictable, structured content.

#### Stories from the front lines

A legal publisher collects rulings from thousands of judges. The rulings are prepared idiosyncratically by clerks, assistants, and judges using a variety of word processors. Qualidocs automatically processes the incoming rulings, identifying sections of the ruling (such as jurisdiction, names, and so forth) and marking

cross-references to statutes and precedents. The result is predictable, structured content that is stored in a database as XML.

A large telecom equipment vendor identified over 3,000 people in the organization distributed worldwide who regularly create documents for external consumption. The documents suffered from inconsistencies in presentation of elements of the corporate brand (such as references to proprietary technology or product names), use of terms that carried problematic connotations or ambiguous meanings in different cultures, spotty adherence to policies mandating gender-neutral language, and—of course—ad hoc formatting that made copy and paste into new documents time-consuming and error-prone. Qualidocs automatically inspects the documents, enforcing adherence to the corporate style guide. The result is predictable content that meets corporate standards.

### THE “NO NEW SOFTWARE” AND “NO TRAINING” REQUIREMENTS

To meet the requirements of “no new software” and “no training,” Component Publisher and Qualidocs function as plug-ins to Word and do not require software installation on user PCs. Component Publisher and Qualidocs overlay seamlessly with existing functions on the Word toolbar. All toolbar buttons, menu items, and keyboard shortcuts currently in use remain available to staff.

To minimize the learning curve, our guidelines mandate that staff will be able to effectively use the solution without training. Complete training for staff charged with administering the solution (setting new rules, building sets of rules) typically requires about two workdays.

### No requirements for authors to apply styles

The solution must function effectively without requiring users to apply or even consider styles. Qualidocs separates formatting from content without conscious effort on the part of the author.

### FINDING CONTENT COMPONENTS

If content components are not easily identifiable, personnel will create redundant building blocks or will manually enter content instead of using components. In both cases the results will be higher maintenance costs, lower

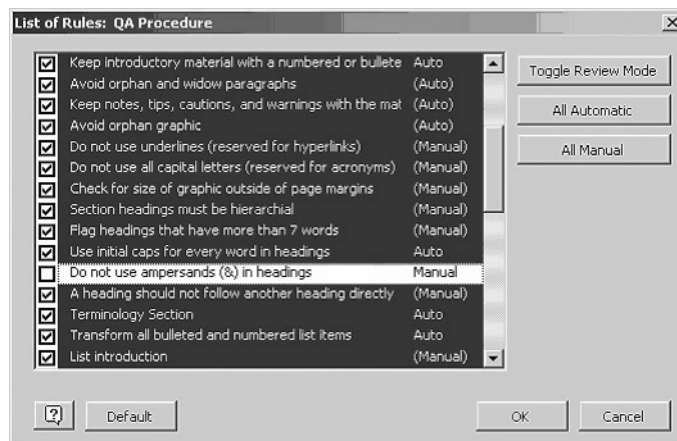


Figure 2. Using Qualidocs Rules to Create Predictable, Structured Content

productivity, and more errors in documents. To make content easy to locate, the solution incorporates various paths to reach reusable content:

- ◆ Drill-down navigation by alternative hierarchies (such as product line, form number, technology use, or document type). Remember, each member of your staff thinks about your organization in various ways. Live Linx implements XML topic mapping to enable many alternative hierarchies.
- ◆ Full-text search
- ◆ Parametric search (full-text constrained by fields such as date, author, and keyword)
- ◆ Applicability (such as: “all components that relate to a particular version,” “all items for 10K forms,” or “all press release components”)
- ◆ Index

#### **Avoiding redundant content chunks using applicability**

Applicability is a neat way of organizing related content chunks and making the chunks accessible. Applicability allows you to prepare components with the same names but note when each component should be used. See Figure 3. An attorney preparing filings, for example, might prepare two “forward looking disclaimer” components—with one component applicable to precious metals funds and another component applicable to agricultural commodities.

#### **PUBLISHING COMPONENTS INTO FINISHED PRODUCTS**

Using components is a means to an end: publishing a coherent document for readers. The document may be a sales proposal, an EDGAR filing for the SEC, manufacturing instructions, an internal procedure, legal decision, or other document.

Thanks to predictable, structured content, documents created using the solution can be published automatically to multiple formats and personalized according to reader profile. While publishing to print/PDF and HTML/XML covers most needs, predictable, structured content enables automated export to QuarkXPress or Adobe InDesign documents for highly stylized print outputs or export to

complex electronic outputs such as the Aircraft Maintenance Manual (AMM) DTD for SGML or XML.

#### **Stories from the front lines**

Attorneys preparing a filing for the SEC can press the “Prepare EDGAR” toolbar button to automatically convert a Word document—including reused content components—to EDGAR-compliant HTML conforming to all current SEC specifications. Attorneys implement last-minute changes to the filing in Word. Pressing the “Prepare EDGAR” toolbar button instantly generates an updated version of the EDGAR-compliant HTML.

Subject-matter experts at Methoda Consulting update information about their area of expertise in a single Word component. Comprehensive guidelines for Methoda Consulting customers are automatically published in Web, CD, PDF, and print formats. Thanks to use of applicability on content components, customers can subscribe to different types of information, and Methoda Consulting can sell and deliver personalized publications matching each customer’s subscription preferences. Without predictable, structured content, Methoda would be unable to automatically assemble documents from thousands of content components.

#### **MANAGING UPDATES ON CONTENT COMPONENTS**

Unlike plastic building blocks that don’t change over time and can be used in only one place at a time, content components can be

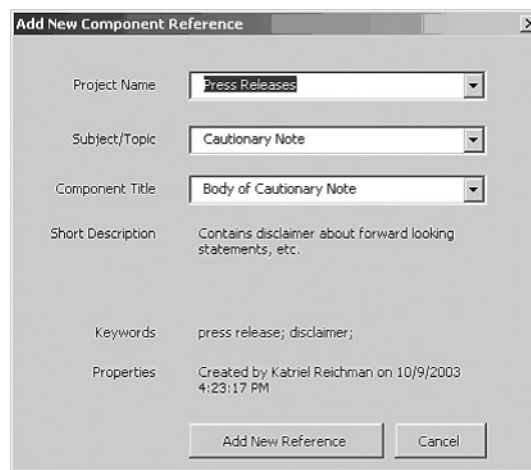


Figure 3. Navigating Quickly to Content Components

**Workflow and Review Processes**

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Katriel Reichman founded Live Linx in 1992. He has designed and managed implementation of multi-dimensional single sourcing and automated content processing solutions for Avaya, Barnes and Noble, Macmillan, and other companies in the technology, publishing, and financial industries. Thanks to single sourcing, Katriel has more time to spend with his family and more time to spend cycling.

Katriel speaks frequently at professional conferences and meetings such as Seybold, XTech, WinWriters On-line Help, STC, XML/SGML, Teldan Info, and others.

edited and reused simultaneously in many different documents. Successfully managing change in content components is critical to success. The issues that need to be considered include how to control the ripple-through effect when a component is changed. It is important to consider how to reconcile content when performing the following tasks:

- ◆ Triggering automatic changes
- ◆ Triggering selective changes
- ◆ Clarifying the relationship of component changes to “frozen” versions
- ◆ Delaying review of some component changes

We have devoted a lot of effort to reconciliation, which refers to defining the relationship between the components and the documents that host the components and defining the role of the “document owner” versus the role of the “component owner” when a component is changed.

#### **WORKFLOW AND REVIEW PROCESSES**

A workflow maps the progress of a single component or of a document (such as an SEC filing, a sales proposal, or a case study) from project start to publishing and beyond to component reuse.

The solution specifies how document owners become aware—and what they need to do—when a component in one of their documents changes. Different document types may require different approval stages in the workflow. In some cases, the change should be implemented automatically. In other cases, the change may be suspended pending approval by the document owner.

The solution administrator has workflow status reporting to ensure the smooth flow of document components from author to proof-reader to approval and publication. Reporting for the solution should describe status and waiting tasks for individuals in the organization as well as for projects, publications, and customers.

#### **BUSINESS BENEFITS OF BRINGING REUSABILITY TO THE OFFICE DESKTOP**


You can and should measure the return on investment in bringing reusability to the office desktop for ordinary users. The up-front and

maintenance costs are low—because new software does not need to be installed on user workstations—and the benefits are disproportionately high:

- ◆ Update once; update everywhere. Update content once in Word and automatically generate updated content for many documents published via multiple channels.
- ◆ Avoid redundant sources in Word and HTML/XML when print and on-line documents are required.
- ◆ Reduce production costs. Live Linx anticipates savings of well over 50 percent compared to current workflows.
- ◆ Speed production. Export to Word, PDF, HTML, XML, and other formats with the push of a button. Instantaneously export to a published format after changes are made to the Word document.
- ◆ Dramatically reduce time and cost for staff training. Eliminate arcane coding (and repeat coding when content changes).
- ◆ Radically improve quality. Single sourcing enables you to focus your quality assurance efforts, making sure that content is accurate, up-to-date, and perfectly presented.

#### **Stories from the front lines**

In a real-life implementation for attorneys preparing EDGAR electronic filings for the SEC, the solution reduces average document manipulation time from the time that the attorney releases the filing from over 10 hours to less than 30 minutes on the very first implementation. Attorneys save additional time preparing future filings because document components are now available for rapid use.

Bringing reusability to the office desktop for ordinary users is attainable and sustainable. It's good practice and it's good business. Go for it! 

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