CASE STUDY: CREATING WORK INSTRUCTIONS

SUMMARY: Creating work instructions is a common daily task fraught with high costs, substantial risk, and time-consuming delays to project lifecycles. ***Using SWISS can reduce time to create work instructions or similar documents by up to 75%.***

Description:

A "work instruction" is a technical document containing step-by-step instructions and guidance for performing a task within a process. Examples: "Heat-treating the unpainted parts" or "Final milling step" or "Assembling the circuit board". The work instruction is usually one among many steps for producing a component or product. This document contains references to various industry and company standards and specifications along with fragments of content sourced from other documents. Work instructions are typically created by an engineer, designer, or a specifier, and can come from your own organization or other organizations.

How It's Done Today:

Work instructions are typically created using a text editor like Microsoft Word, Google Docs, or a proprietary system. Sometimes, a company will have a standard template for work instructions. When creating a work instruction from scratch or using a template, the author will reference requirements outlined in a specification or drawing and explain to the user how to create the component or product. Rather than creating new statements to describe a process, the author will use a statement like "apply adhesive per ASTM D6106" and "lateral weld strength must be in accordance with AWS D1.1." The author may also insert text, drawings, equations, tables, and other elements via copy/paste or manually re-keyed from internal or external standards. Alternatively, the author may copy an existing set of work instructions (i.e. "cloning") and make a few changes to accommodate the creation of the new product. The final document is usually a compilation of data from many sources.

The Problems with This Method:

- Source materials such as company standards, customer specs, or industry standards change frequently. Content that is copied/pasted or manually re-keyed from these sources is typically static, meaning it has no link or automated way of being compared to its source materials to determine if a change has been made. Users of work instructions may not know about those changes until it's too late to take proactive measures. ***This can lead to rework and project delays downstream when the changes are discovered, or worse, deficient product quality, regulatory non-compliance, and product liability.***
- Even when the user of work instructions is somehow notified that a source document has changed, then they have to analyze that source material to identify the exact changes, and if/how those changes affect their task. ***This can be a tedious and time-consuming task that is also prone to human error.***

- Copying/pasting content is time-consuming and unreliable, and manually re-keying content is risky, especially when re-keying sensitive elements such as equations and complex tables. ***This tedious and error-prone process adds substantial time to project cycles and increases risk to the organization.***
- When using work instructions, the user often must find and read the source material. In the above example, a user might have to find and read AWS D1.1 which happens to be a 400-page document. ***This adds significant time to the project.***
- Keeping each set of work instructions up to date can be a huge undertaking ***requiring additional employees just to manage change***. Imagine if a work instruction has references to 10, 25, or 50 unique documents (not uncommon)!
- When a work instruction is created by cloning and then editing a prior version, any out-of-date references are propagated and need to be mitigated. This problem grows exponentially given the number of work instructions an organization uses.

The SWISS Solution:

SWISS provides a simple and accurate way to insert content from other standards or specifications ***while maintaining an active link to the specific reference at the authoritative source***. Any type of data element including text, tables, graphs, images, and equations can be "dragged and dropped" instantly from source material into a MS Word document or another text editor, thus making that data interoperable with many other documents and applications. Whenever the work instruction is opened, the user is immediately notified of any changes to references contained within, and the exact redline changes can be viewed with a single click.
Also, any references included in the SWISS document are active clickable links so a user can simply click and view the exact reference within the authoritative source document.

Benefits:

Using SWISS in the creation of work instructions and similar documents (test plans, process standards, etc.) automates change management, accelerates project cycles, mitigates risks, and focuses an organization's resources on value-added performance rather than time-consuming manual labor. **Independent third-party analysis showed that using SWISS to build a test plan or work instructions can reduce time up to 75%.**