



# Electronic Documents in the Mortgage Industry

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**Electronic:** Of, implemented on, or controlled by a computer or computer network.<sup>i</sup>

**Document:** **a.** A written or printed paper that bears the original, official, or legal form of something and can be used to furnish decisive evidence or information. **b.** A writing that contains information. **c.** *Computer Science* A piece of work created with an application, as by a word processor.<sup>ii</sup>

**Electronic Document:** is any electronic media content (other than computer programs or system files) that are intended to be used in either an electronic form or as printed output.<sup>iii</sup>

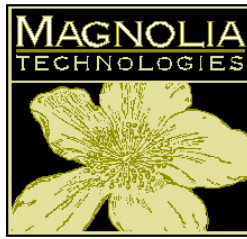
Long ago and in a faraway time before computers, documents were only on paper. Paper is a convenient standard, a widely employed model, for representing any kind of writing that contains information. We have agreed to common shapes (letter or legal) and content (letters, memos, loan applications). The fax machine allowed for paper to be transmitted over the telephone line. But it was the new era of computers that brought the advent of electronic documents. Word processors -- document preparation systems -- were developed for the production of printable material. And as a by-product of creating the printed form, an electronic document was created.

Even though the original goal of word processors was to create paper, benefits of a document in an electronic form soon became apparent. Electronic documents are easier to locate, to access and cheaper to store. Technologies for scanning and online character recognition were developed. Imaging systems were implemented to archive paper into electronic documents.

The process or workflow for documents became this:

Step 1: Use word processor to create an electronic document.

Step 2: Print the electronic document.



Step 3: In the mortgage industry, sign or annotate by pen most of the printed documents.

Step 4: Scan the paper document to a new electronic form.

Essentially, technology is used to create paper and then technology is used to transform paper back into electronic documents.

But it's actually worse than that. Scanned documents are represented as images and require the capability of being a snapshot; that is, scanned as an immutable document -- one that cannot be edited or manipulated. Adobe's Portable Document Format, PDF and TIFF, Tagged Image File Format are the dominant representations for representing image documents. Both TIFF and PDF are under the control of Adobe and require proprietary software to display and print the documents.

So, one technology is used to create an electronic document in a word processing format and print the electronic document to paper. Another technology is used to scan the paper document to a different electronic document format in case it ever needs to be printed again. Clearly, this process is broken.

With the advent of the Internet, HTML web pages, HyperText Markup Language, became a new promising form of an electronic document. Web pages are easily displayed on any computer system, be it Windows or a Macintosh PC. Web pages may be printed to paper. It does not matter physically where the web page is located -- it can be anywhere in the world.

Why not just use the web pages to realize the full potential of electronic documents? Web pages have limitations, which become obvious when you try to search for information. More often than not, a search will generate links to irrelevant web pages and imprecise information. In a way, we can think of the internet as a fancy fax machine of web pages; that is, something that transmits static pieces of paper from one location to another without much context to its contents.



eXtensible Markup Language (XML) is the next generation of Web pages. Just like HTML, XML can define how pages appear in Web browsers. But XML does much more than that--it provides a context for information. While HTML tells the browser what a page should look like, XML defines what the piece of information actually means. Both HTML and XML are markup languages; that is, they insert markup, or additional information, into text. The markup is known as a "tag". For example, HTML marks up text on a page by inserting a <b> tag when the text should be bolded. But the HTML tags leave no way to distinguish between a borrower's name and the lender's loan number. Both might be bold on a form and are both tagged with <b> for bold in HTML. XML, on the other hand, marks each item with more specific tags that enable computers to distinguish them. With XML, humans and computers can tell the difference between a <BORROWER> tag and <LOAN\_FEATURES> or a <LenderLoanNumber> from a <Phone.Number>.

MISMO defines content standards for the XML tags such as the loan amount in the logical data dictionary. When I say "Loan Amount" how do you know that I am talking about the base loan amount, not the original amount requested by the borrower? You will know if you use MISMO standards. Individual data points are defined for both.

MISMO also defines the SMART Document specification – an XML electronic document that includes information about the document as a whole (for instance is the document an Appraisal or a Deed of Trust?), a data section (so that the Loan Amount can be easily determined) and a view of document which may be in a variety of representations for electronic documents such as HTML and PDF.

Additionally, SMART Documents include the capability to include a digital signature. The digital signature provides the ability to investigate whether the document has been tampered with in anyway after a human has signed the document.



Electronic documents in XML allow rapid, easy information access reduce cost and improve efficiency. But why are mortgage documents still mostly created by technology but then printed on paper?

It all comes down to choices. It is difficult to agree to one thing when several exist. I may choose to represent my view of the document in HTML. "Less filling" I say. You choose PDF because it "tastes great!" These are two very different electronic documents. How can we exchange information? Let's go back to paper isn't it easier?

Soon, the element of choice will be removed. There are two XML standards to create and save documents in word processors. One is called Open Office XML (OOXML) and the other is Open Document Format (ODF). These are XML formats that word processors can read. All word processors. If the view of the SMART document is in a standard XML format for a word processor then the element of choice is removed. All representations of electronic documents are in XML.

The power of the MISMO framework for electronic documents -- standardized data representation, the determination of document type and the integrity of the document contents -- can be fully realized. Instead of allowing choice in the view, this could be limited to one or the other or both. But that requires industry agreement.

Why can't we get there? We are. The use of XML use by major word processors and open source applications is the best of both worlds -- tastes great *and* is less filling at the same time.

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<sup>ii</sup> American Heritage® Dictionary of the English Language, Fourth Edition Copyright© 2006, 2000 by Houghton Mifflin Company

<sup>iii</sup> [http://en.wikipedia.org/wiki/Electronic\\_document](http://en.wikipedia.org/wiki/Electronic_document)