Lost in Translation: Interoperability Issues for Open Standards

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Open standards are widely considered to have significant economic and technological benefits. These perceived advantages have led many governments to consider mandating open standards for document formats. Document formats are how a computer stores documents such memos, spreadsheets or slides. Governments are moving away from Microsoft's proprietary DOC format to open standard document formats, such as the OpenDocument Format (ODF) and Office Open XML (OOXML). The belief is that by shifting to open standards, governments will benefit from choice, competition, and the ability to seamlessly substitute different vendor products and implementations.

This paper examines whether open standards by themselves can deliver on these promised benefits. The study examines interoperability for three document formats: ODF, OOXML, and DOC. The research assesses interoperability among different software implementations of each document format. For example, the implementations for ODF included KOffice, Wordperfect, TextEdit, Microsoft Office, and Google Docs. A set of test documents is used to evaluate the performance of other alternative implementations.

Our results show there are very significant issues with interoperability. The best implementations may result in formatting problems, while the worst implementations actually lose information found in pictures, footnotes, comments, tracking changes, and tables. Our findings also include specific scores for each implementation. There was considerable variation in how well each implementation for any particular document format performed. For example, for ODF, the raw scores ranged from 151 to 48.

The results question the assumption that open standards guarantee interoperability and thereby promote competition and vendor choice. The interoperability issues are troubling and suggest the need for improved interoperability testing for document formats. The results also highlight the importance of following through on interoperability for open standards. Without interoperability, governments will be locked-in into the dominant implementations for any standard. These results have significant policy implications for governments setting open standard policies.