



**A**t the end of each interoperability test, DGI writes and posts a final report which contains critical information on what was tested and includes the list of consensus items discovered during that test and during previous test rounds. Consensus items are standards interpretation and other issues discovered and resolved during testing. The growing list of consensus items related to standards interpretation for each test round reminds us that the technical standards in and of themselves cannot ensure interoperability.

For software vendors implementing the standard into their product, the details are critical. When the vendors begin product development, they study the standard to grasp all of its instructions and requirements, and then they develop software precisely to carry out the standard. However, developers can not implement where they are not instructed, and there are many situations where developers must make their own interpretations.

Despite the careful and thorough work of a standards body, nearly every standard leaves out rules or conditions which affect the implementation. Most standards have optional components using words such as "SHOULD" or "MAY." While they may be necessary to allow for flexibility, these words often lead to differences that create interoperability issues. Also, standards have "gray" areas where the requirement is not clear or can be misinterpreted. In these cases, developers either choose or are forced to make their own interpretation where the standard is silent or confusing.

Some standards bodies and organizations attempt to address these interoperability issues by creating profiles. Profiles provide extra information and guidance on the implementation of the standard for a specific purpose. While beneficial, a profile cannot guarantee interoperability since a profile is itself, something of a standard, it is also subject to the same weaknesses such as leaving out key information and requiring interpretation.

The reality is that standards can not ensure interoperability. No matter how well-written, there are gaps in standards. Oxlo pointed this out regarding the ebXML Messaging Service standard in their article, "Standards Have Holes" ([http://oxlo-observer.typepad.com/oxlo\\_observer/2005/10/standards\\_have\\_.html](http://oxlo-observer.typepad.com/oxlo_observer/2005/10/standards_have_.html)), but it can apply to any standard.

What standards are lacking is a medium of interoperability testing. A neutral interoperability test creates a forum for a common interpretation and implementation amongst a product group. Through interoperability testing, differing interpretations are identified and resolved. Usually the vast majority of the testing participants agree on a common interpretation and the few dissenters make necessary changes. For the few issues which are more evenly divided among the participants, the standard producing body can be queried for their interpretation to bring everyone on board.

Rik Drummond, DGI's chief executive officer, uses the term "productizing the standard" to explain what an interoperability test produces. Products that are interoperable over a standard have made the standard "alive" in the supply chain, and these interoperable products are in fact the embodiment of the standard which is what users really want: standards that work in the supply chain.