Why Open Standards are Vital to the Real Estate Industry

A RESO White Paper

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The Real Estate Standards Organization (RESO) is an independent open source not-for-profit standards trade organization. RESO was first established in 1999 as part of the National Association of REALTORS®, the largest real estate trade organization in the world with 1.3 million members. In 2011, RESO was spun off from NAR to become its own independent organization. Its mission is "to create and promote the adoption and utilization of standards that drive efficiency throughout the real estate industry." RESO actively develops, adopts and implements open and accepted data standards and processes across all real estate transactions. RESO provides an environment for the development and implementation of data standards and processes that facilitate software innovation, ensures portability, eliminates redundancies and obtains maximum efficiencies for all parties participating in real estate transactions.

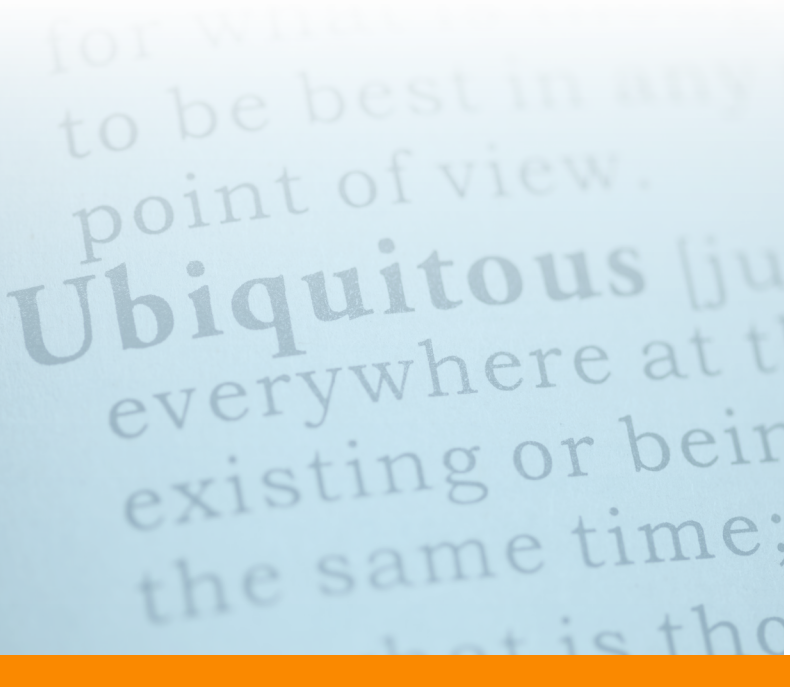
Why Open Standards are Vital to the Real Estate Industry

With the tap of a button or two, your Bluetooth headphones connect to your stereo, your MP3 player, or your car. Today you can choose over 20,000 Bluetooth headphones on Amazon, ranging in price from $3.99 to over $17,000 – and headphones are one of a multitude of available Bluetooth device types. Competition and innovation in that market are fierce – and it's based on an amazing consumer experience made possible by manufacturers conforming to an open standard. The Bluetooth standard has evolved a lot over twenty years, and the standards group has grown from 5 companies to over 34,000. That is a standards success story.

Imagine if pairing your real estate applications to move your data around was as easy as Bluetooth pairing. That's what we are working on at RESO, the Real Estate Standards Organization: a single, ubiquitous set of Open Standards that can make this a reality.

U·biq·ui·tous –

Adjective: Present, appearing, or found everywhere. Synonyms: omnipresent, pervasive, universal.



What is an Open Standard?

There are two types of standards: open standards and proprietary closed standards.

To be an "open" standard, the development and approval process must be a consensus-based, collaborative process that is transparent to participants. To accomplish this, RESO members participate openly in the organization's chartered Workgroups and Committees where changes to standards for the real estate industry are proposed, collaborated on and voted on. Meeting agendas, minutes and the online discussion groups are fully transparent and easily available to all members of RESO, not just members of the individual Workgroups. There are democratic elections for the RESO Board of Directors, which provides final approval for new versions of its standards.

To be an open standard, it must be vendor-neutral. All RESO specifications are vendor-neutral – given the diversity of the RESO Workgroups and board of director participants, it would be incredibly difficult for any company to gain an advantage over its competitors. At the beginning of each Workgroup, Committee, Board and general meeting, the organization's antitrust policy is read:

> *"RESO strives to increase competition in the marketplace and will not be a forum for anti-competitive conduct. The RESO Antitrust Policy governs the activities of RESO and its members, including this meeting. A link to the policy was emailed to you with the meeting agenda. Please consult RESO's counsel if you have any questions about the policy."*

Additional information on the antitrust policy is available here: https://www.reso.org/antitrust-statement/.

To be an open standard, standards documentation must be openly published, companies must be able to use the standard at no cost, and the number of implementations must not be artificially limited. RESO publishes its standards online freely for use (here: https://www.reso.org/resources/). The costs for RESO membership and standards compliance certification do not create barriers for startup companies, and there are no limitations on the number of standards-based implementations that may be created.

Reasonable Restrictions

Open standards provide for reasonable restrictions and, like other open standards groups, RESO has some reasonable restrictions on organizations contributing to and using its standards.

For example, by having members accept its bylaws, RESO ensures that members formally accept the way the company is run and standards are developed and that members cannot publicly imply that RESO endorses, recommends, or supports the use of their product or service.

Members must also accept the MIPRA (Member Intellectual Property Rights Agreement), which provides many protections for RESO and its members as well as any organization utilizing RESO standards. For example, standards contributors agree that they will not include their trade secrets or others' intellectual property in their contributions, and that their contributions may be used as a part of the standards. Members have a process to follow if their intellectual property has made it into a standard's draft. The MIRPA also makes it clear that RESO owns all the intellectual property in the standards and provides a license to use them at no cost – now, and in the future.

When one downloads and uses RESO standards, one must agree with the EULA (End User License Agreement), which provides for the "worldwide, royalty-free, non-exclusive license to reproduce, distribute, make derivative works of, display and otherwise exploit RESO Product solely for incorporation into End Users products or services directed toward the real estate information industry." The EULA forbids users from creating derivative technical standards and gives RESO the ability to revoke a license if someone uses the trademark without permission, engages in illegal activities, is involved in intellectual property infringement, or tries to sell the RESO standards or derivative work as a product.

Proprietary Standards

The alternative to an open standards approach would be to create a proprietary (closed) standards model for the real estate industry. Proprietary standards would have a creating entity retaining the intellectual property rights such as the copyright or patent of the standards. They would be created by

a limited set of individuals, eliminating the ability to leverage knowledge and expertise outside the boundaries of any one organization. Standards documentation wouldn't be openly published, limiting the number of developers that could be contributing to industry innovation.

One of the major reasons open standards are preferred is that proprietary standards are often surpassed by open standards. History is littered with failed attempts with proprietary standards. For example, Sony's BBeB (Broad-Band eBook) lost to the open ePub standard, and their Adaptive Transform Acoustic Coding (ATRAC) lost to the MP3 standard. For years, every digital camera maker had their own proprietary memory card format: Sony products used Memory Sticks, Olympus used xD, and Fujifilm used SmartMedia - but in 2000, SanDisk, Panasonic, and Toshiba created the SD Association (SDA), a non-profit organization with over 1,000 members today participating in developing and enhancing the highly successful, portable and interoperable Secure Digital (SD) memory card standard which lead to making the obsolescence of the proprietary formats.

Sometimes proprietary standards have been surpassed without a single unified open standard to replace them. For example, in trying to replace their proprietary document formats, Microsoft has provided a standard called OpenXML (OOXML) while other entities are advocating for an open standard called the Open Document Format (ODF). Meanwhile, Apple's Pages software isn't compatible with either standard. If you are a PC user, you

know the experience when a Mac user sends you a file created in Pages. How frustrating is it when you can't open a document a co-worker has created? A single open standard is a solution to the elimination of that frustration.

More Failed Examples of Proprietary Standards

A similar standards failure occurred in the instant messenger space. AOL, Yahoo, and Microsoft were unable to create a single open standard, and each thought it could win with proprietary solutions. Today, you're probably not using any of them to reach all your friends and colleagues. The world moved to text messaging, as defined in the GSM standard. Today, there is a strong movement to use RCS (Rich Communication Services) – an open standard for the next generation of messaging.

When companies abandon proprietary standards, embrace an open one, and when that open standard is ubiquitous in its use and available on the Internet at no cost, it draws the attention of people with business ideas, as well as software developers. Having a single set of open standards creates the broadest possible developer community, which in turn creates increased competition in creating data-driven tools for the industry. The result: competition leads to innovation that benefits the industry.

Abandoning Proprietary Ways: Case Studies

Katie Ragusa, VP Product Development for TRIBUS, recently presented how her company moved from using a proprietary internal data structure for storing listings to RESO standards. **She showed how TRIBUS' process of obtaining data from new sources had been made vastly more efficient, as illustrated below:**

BEFORE Using RESO Standards	AFTER Moving to RESO Standards
1. Get credentials 2. Map our best guesses 3. Import sample set 4. Check sample results 5. Re-map based on sample results 6. Import full data 7. Deliver to client (broker) 8. Update mapping based on client feedback 9. Re-import 10. Repeat until everyone's happy	1. Get credentials 2. Import data

The efficiency that TRIBUS obtained moving from a proprietary standard to a RESO open standard is striking. Any company that can take a 10-step data process and reduces it by 80 percent to a two-step process will instantly benefit from – and appreciate the value of open standards in real estate that RESO provides.

But the TRIBUS experience is not unique. Homes.com, a nationwide real estate portal and one of the largest in the industry, performed a case study involving six MLSs and three MLS technology companies utilizing RESO Data Dictionary and Web API Certified data feeds. Their RESO Data Dictionary implementation, an open standard, took 228 hours on the first MLS, 46 hours on the second, and only 24 hours for the third MLS they added. The Web API implementation took 165 hours for the first MLS and only 16 hours for the second MLS.

Twenty-five development hours reduced to just two hours by utilizing the Data Dictionary across the RESO Web API per MLS. In summary, **Homes.com obtained a 92% reduction in development time going forward to build new MLSs into the Homes.com platform utilizing MLSs certified on RESO standards.**

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The Speed Tradeoff

One common complaint about open standards is that when one needs to create consensus among many companies to create change, change occurs slowly. For example, it took the HTML standard fifteen years to evolve from version HTML 4 to version HTML 5. Frustrated with the lack of capability of the HTML standard, companies created proprietary technologies like Flash and Silverlight. This allowed firms to fill a market void immediately. For a time, it enabled developers to create websites with additional capabilities not available through with open standards. But guess what happened to these closed, proprietary standards long term? Today they are all but obsolete. The money that firms invested in these technologies are lost, and the legacy software they must replace with the new open standards will require additional development costs. Just as in the fable, the speedy hare eventually lost the race to the slower tortoise.

Like any open standard, current RESO standards could be adopted more broadly and quickly, and RESO standards could be expanded to cover more areas within the Real Estate industry. For example, when RESO standards are created for moving transaction and document management data around, real estate brokers and agents will have the opportunity to choose from a greater selection of software with the security of knowing they will have interoperability with those platforms powered by RESO's open standards. As RESO standards are finalized for better moving lead-generating related information, the industry will reap a great deal of exciting innovation surrounding that data and the associated products available to brokers and agents.

How can we move forward more quickly with standards development? The answer is for all stakeholders in the real estate community to continue to increase the money and effort dedicated to the process. RESO has grown by leaps and bounds with over 800 organizations now participating, and the pace of work has increased. As the number of Workgroups and Committees has grown from just a handful to 11, with sub-workgroups launched within many of the Workgroups to accelerate the development of standards in very specific areas.

Increasing the pace of standards adoption is more complex because real estate brokerage products don't have the same NAR MLS policy mandate for RESO standards adoption that NAR-affiliated MLSs do. The good news is that real estate broker-owners and franchise decision makers and technology leaders are increasingly getting involved with RESO. There is a growing awareness in the brokerage community surrounding the value of RESO and the need for RESO standards. And, if standards are prioritized in technology provider selection and contracts that support brokers, we should see an accelerated improvement in brokerage-oriented standards development and adoption.

While it may always be faster for a single company to act on its own rather than waiting for – or put-

ting the resources into helping to develop - open standards, there's a tradeoff for that speed: ubiquity. Having one standard that works everywhere has enormous value and a marked advantage over propriety standards.

Ubiquitous standards attract developers because they know their work can be used across the largest possible marketplace. Ubiquitous standards also provide efficiencies for all involved. To use the HTML standard again as an example, there was a period when each of the major web browsers introduced their own proprietary features on top of the standard.

For example, Netscape Navigator introduced a "<blink>" tag that alternately made the text inside "start" and "end" tags alternate between visibility and invisibility. Microsoft's Internet Explorer had a "<marquee>" tag that added scrolling marquee text on the page. Developers hated these proprietary extensions, which would only work on some web browsers. There were dozens of other non-standardized HTML extensions, and scores of ways that browsers misinterpreted the standard such that developers needed to code their pages differently to look the same in different browsers. Though each browser company thought the others would adopt the improvements they made - despite not going through a standards process - that typically didn't happen. Because there was no stringent compliance testing, all browsers could claim they were HTML compliant, even if they didn't work fully and properly with the standard. The result of this was increased web development costs as web pages needed to be coded differently to create the same effect on multiple browsers to reach all the users. Moreover, the pages needed to be tested on each version of many web browsers, which increased costs further. When browser companies experimented with going outside the standards process, the cost and complexity of web development increased, and web pages broke more often. If browser providers had stuck to the standards, the development experience would have been more efficient and reliable, leading to a better consumer experience.

Now, in the real estate industry, companies may still experiment with innovative ways to structure and move data outside of the standards process. Sometimes that's necessary as companies innovate with application development. But it should be obvious that the best case for development is, in the long term, to be able to create one set of code regardless for all MLSs, brokerages, franchises, or technology companies. Bringing ideas for enhancement into the standards process is important so that we have a single standard that is ubiquitous. Long-term deviation from industry-wide standards and creation of proprietary APIs (closed standards) to move data that many parties want to store and move between systems is a long-term, losing position for everybody.

Blockchain and Open Standards

One of the most interesting new technologies that we are starting to see in the real estate industry is "blockchain" – a ledger storage of records ("blocks") that are highly difficult to edit and falsify, being protected by cryptography and by being stored across many computer systems. There are many potential applications for this technology, including title, mortgage, storing property information, and even helping manage the process of the transaction itself. RESO has recently initiated a new Workgroup focused on blockchain, the Distributed Ledger Workgroup. According to the RESO website, "The purpose of the RESO Distributed Ledger Workgroup is to identify and document property lifecycle events. These events could be recorded in a distributed ledger by the industry participants to support accountability, provide instant notifications and identify rules/patterns that are valuable to real estate professionals."

When information is stored in easily editable databases, one can easily make changes to map old data into new ways of representing that data as standards evolve, so one doesn't have to deal with data stored the "old way." But once we start storing data in blockchains where it can't be changed, we cannot reflect the new ways of representing that data back into the existing blockchain records. That could result in complexity for searching and managing that data going forward. Therefore, if one believes blockchain - or something like it - will be important to the future of the industry, it is more important than ever to bring ubiquitous open standards to maturity for the industry now.

Open Standards Takeaways

Following are key points to remember:

A single set of ubiquitous open standards for real estate creates:

- the largest and most attractive marketplace for innovators.
- great technical efficiencies; allowing innovators to focus on the software we see - instead of expending effort on moving data.

RESO creates open standards for the real estate industry. In an open standard:

- the development and approval process must be a consensus-based, collaborative process that is transparent to participants.
- the standard must be vendor-neutral.
- documentation must be openly published.
- there are no limitations on the number of implementations that may be created.

Proprietary "standards" create marketplace inefficiencies. The TRIBUS and Homes.com Case Studies illustrate the dramatic benefits.

- Proprietary standards almost always lose to open ones, especially when many companies need to work together using that standard.
- Open standards take time – but the result is worth it.
- The speed of proprietary "standards" does not pay off in the long term. Remember the failures of Flash, Silverlight, and proprietary web browser extensions.
- **To increase the pace of standards development, all industry stakeholders should be fueling RESO with additional money and active participation in Workgroups. If your company touches real estate data in any way and isn't involved in directing, informing, or writing these standards, it should be!**

About RESO

The mission of the Real Estate Standards Organization (RESO) is to create and promote the adoption and utilization of standards that drive efficiency throughout the real estate industry. RESO was incorporated in November 2011 as an independent, not-for-profit trade organization that was previously a section of the National Association of REALTORS®. RESO has more than 800 active members including the NAR, Multiple Listing Services and real estate associations representing 1.3 million members, real estate brokerages with nearly 1 million agents, and industry technology providers serving hundreds of thousands of real estate professionals. For more information, visit www.reso.org. Contact RESO via email at info@reso.org.