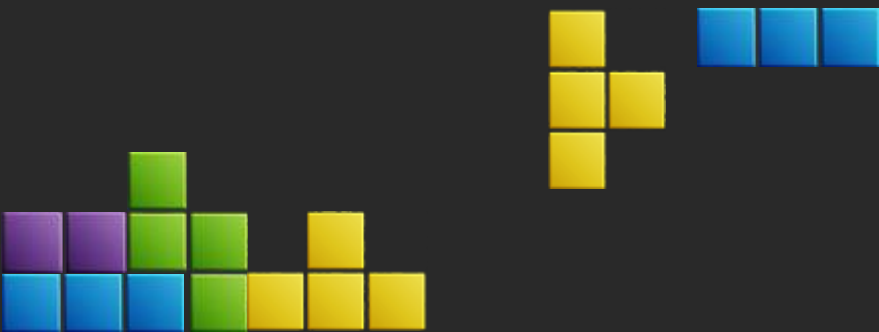# RESO®

2018 Spring Technology Summit

Expanding and Launching Profitability through RESO Standards

IT'S GAME ON
FOR DATA STANDARDS!

Greg Moore| VP Technical Systems

Greg has been involved in Real Estate Technology for 32 – years and at RMLS for 16. As Vice President of Technical Systems, he provides leadership and general oversight of RMLS' technological goals and activities. He facilitates the technical requirements for data processing, hardware services, network communications, and management information services to accomplish the company's goals and objectives.

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R&D Workgroup Agenda

- RESO anti-trust policy
- Welcome – Greg Moore
- Agent Unique Identifier – Greg Moore
- Energy Efficiency features and datasets to enhance listing data – Laura Stukel, CMLS
- Transaction Management Standard – Chris – MRED
- ISV Data Structure – best practice / workgroup / sub-workgroup – Tavi
- Teams – implementation and best practice – Greg Moore
- Next Scheduled Meeting

Interoperability

Interoperability imply Open standards.

Interoperability imply exchanges between a range of products, or similar products from several different vendors, or even between past and future revisions of the same product. Interoperability may be developed *post-facto*, as a special measure between two products, while excluding the rest, by using Open standards. When a vendor is forced to adapt its system to a dominant system that is not based on Open standards, it is not interoperability but only compatibility.

Agent Unique Identifier

The RESO Board has asked the R&D workgroup to investigate sourcing or creating an agent unique identifier. Bill Kellogg from ShowingTime, Eric Bryant from benutech and I have discussed options:

- The NRDS ID covers ~70% of real estate licensees but we're striving to come up with a 99% source.
- The only "True" Universal ID, is the Social Security#. Therefore the only 100% solution is to Encrypt, the SS#'s, through Clear Text. The issue then becomes who is the entity responsible for that encryption and storage? If the issue is that important, RESO would be the logical choice, to take on that responsibility.

I'd appreciate your insights and assistance if you're interested and have time.
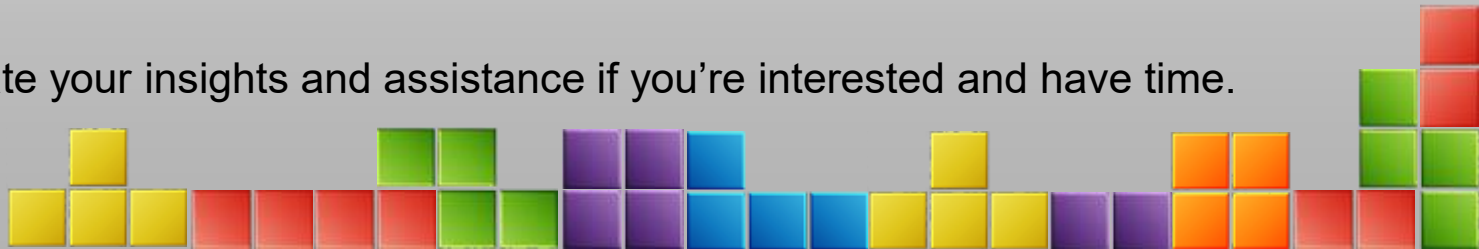
Energy Efficiency Features

Proposed RESO field - "Verified Appliances/Equipment"
ONLY for auto-pop
Combination of data points sent together – 'combo pop'

Possible uses:
Insulation/air sealing
HVAC
Etc.

Vertical implementation to combine data points:
Subfield 1 = Appliance/Equipment (what is it?)
Subfield 2 = qualitative descriptor (how do we describe it?)
Subfield 3 = numeric descriptor (how do we measure it?)
Subfield 4 = auto-pop source (who is the third-party that is reporting this?)

For example:

Spray foam insulation
2nd story walls, basement floor, blower Door test results on file, low VOC
R25
Verified by Home Energy Score
Central AC
whole home, Energy Star Qualified, ACCA-quality installation
SEER 14
Verified by LEED for Homes program

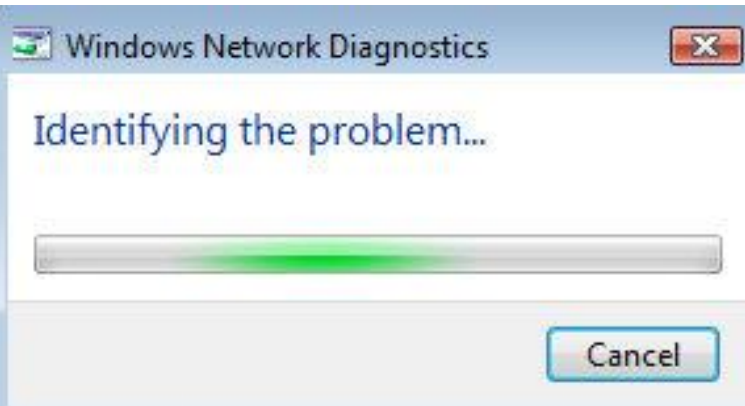Transaction Management

Do we have
a problem?

Inefficiency

Security

"Someone calling themselves a customer says they want something called service."

© 2005 Ted Goff www.newslettercartoons.com

What do our problems create?

Who are the key players?

Primary Stakeholders

- Agents/Brokers
- Brokerages
- Home buyers and sellers

Vendors

Paperless Pipeline
simplify your transaction management

zipTMS
by zipLogix

TransactionDESK®

DocuSign®

dot loop
peoplework not paperwork

instanet
SOLUTIONS®
A Division of Lone Wolf Technologies

reesio

SKYSLOPE®

RealtyBackOffice
Your Real Estate Office in The Cloud

Ancillary Partners

- Mortgage
- Title
- Insurance
- Attorney
- Home Warranty
- Inspectors and more

Let's talk solutions

Direct Integration Between Vendors

Neutral Platform

Cooperation and Consistency

⭐ What benefits will be created?

- Ease of transaction (and life) goes up

  - No more training others on systems or flattening and retagging PDFs

- Risk mitigation with elimination of emailing of transaction documentation and PII

- A Better Experience for Current Customers
- More Exposure into Fragmented Marketplaces
- Anything else?

Open discussion

- Do you agree with any of this?
- What pain points do you see?
- What can or should be done?
- Volunteers for more use cases?

  - In this room, but also from major vendors in the space
- Create a workgroup

Thank you!

SPEAKER

RocketUrBiz
Harnessing Technology, Empowering People

Tavi Truman | CTO

BIO: Celebrating more than 25 years in Software sciences, Information, Cognitive and Applied Ontology Science and Commercial software development. Currently, Tavi leads all aspects of the RocketUrBiz Engineering. His focus is on Ontological Engineering, Real Estate Informatics, Automated Reasoning and Workflow processing.

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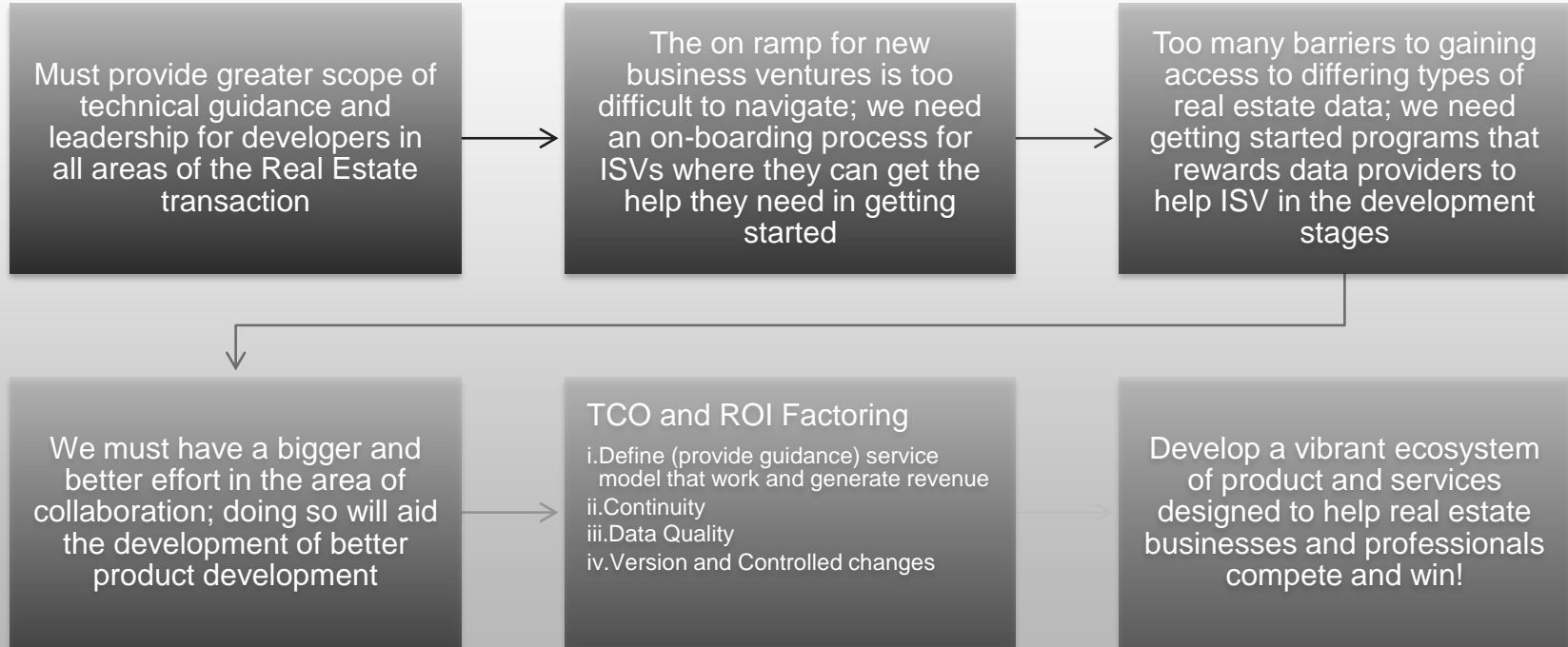
Website: http://www.rocketurbiz.com

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Business Cas for an ISV Developer Technical Practices Workgroup

Must provide greater scope of technical guidance and leadership for developers in all areas of the Real Estate transaction

The on ramp for new business ventures is too difficult to navigate; we need an on-boarding process for ISVs where they can get the help they need in getting started

Too many barriers to gaining access to differing types of real estate data; we need getting started programs that rewards data providers to help ISV in the development stages

We must have a bigger and better effort in the area of collaboration; doing so will aid the development of better product development

TCO and ROI Factoring

i. Define (provide guidance) service model that work and generate revenue
ii. Continuity
iii. Data Quality
iv. Version and Controlled changes

Develop a vibrant ecosystem of product and services designed to help real estate businesses and professionals compete and win!

We need a Compelling story for Product Development, Business and Technology Partnership

3rd party ISV devs need useful and material method of engaging MLS organizations, technical staff and MLS ISV developers

3rd ISV developers need more guidance and advice from MLS technical leaders and staff

3rd party ISV can generate more revenue and improve bottom lines of MLS organizations by helping to develop a broader and deeper data ecosystem, data integration, interoperability services, capability and function set story for creativity and innovation, partnership and teaming

Create repository of tools, techniques, idioms and methods and standard behaviors used to build technology that we can integrate with: data, processes, workflows, etc.,

Workgroup Purpose and Scope

Workgroup Service Model (**Purpose and Scope**): The group's purpose would be to learn from and support data providers and their database implementation technologies. To create a healthy, thriving, intelligent, fun, productive and profitable place where people in technology can share ideas , lessons learned, best practices that support data integration, systems interoperability and partnership.

Extensively the group works to substantially assist ISV's with a substantive reality-based model when building data systems used to power and support technology developed to help brokers, agents and consumers.

The focus of database or data systems in the working context we mean to describe systems that make-up a more extensive ecosystem of data beyond the scope of data found in MLS publication database systems

Specifically, in describing MLS data we mean to universally define and declare reality-based data models that represent buildings that declare and define detailed attribution of a house.

It is the goal of the workgroup to build healthy businesses that seamlessly integrate and interoperate with data providers and other ISV developers

As ISV are working in much broader treatment of real estate data and associated data domains; we must work together with other standards bodies to create a reality-based models that we can invest in. Developing standards that promote integration, program interoperability, encouraging partnering and collaboration.

Perspectivism, Focus and Concentration: Who's at the Party?

- ► ISV (not an MLS ISV, not an MLS, not a Broker dev team) "client-side."

- ► No experience with RETS

- ► New to MLS and data about real estate

- ► Not an IDX ISV

- ► Not purposed to replace DD and or IDX Workgroup but rather augment them and to provide feedback and input

- ► ISV working with RETS – there are gaps and we need to find a path from the As-Is technical stack model to the To-Be model
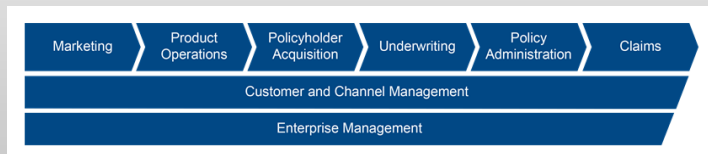
What must an Ontology contain

MISMO Engineering Guidelines

MISMO Engineering Guidelines (MEGs)

- MISMO Engineering Guidelines 0003 (Namespaces) V1.0
- MISMO Engineering Guidelines 0006 (Versioning & Release) V1.1
- MISMO Engineering Guidelines 0007 (Class Words) V1.2
- MISMO Engineering Guidelines 0008 (Approved Acronyms)
- MISMO Engineering Guidelines 0010 (Version Identifcation and File Name Construction) V1.2
- MISMO Engineering Guidelines 0016 (Logical Data Dictionary and New Term Submission) V1.1
- MISMO Engineering Guidelines 0021 (Term Name, Data Point Name, Enumerated Value and Container Name Representations) V1.1
- MISMO Engineering Guidelines 0024 (Use of Elements and Attributes) V1.0
- MISMO Engineering Guidelines 0036 (Use of Xlink to Manage Relationships) V1.0
- MISMO Engineering Guidelines 0040 (Data Point Definition Guidelines) V1.0
- MISMO Engineering Guidelines 0041 (Reference Model Release Process) V1.1
- MISMO Engineering Guidelines 0042 (VIEW Format for Version 3 DOCUMENTS) V1.0
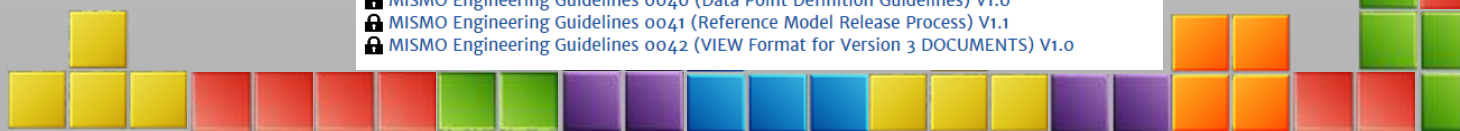
The Right Set of Technical Artifacts – Quickens adoption and partnering

Lack of Technical Artifacts that developers can use to build databases purposed to drive modern database development

ISV can innovate in new business aspects, and application design but need know the structure and organization of the actual relational database model. ISV that develop idiosyncratic MLS relational database schema can result in splintering and fracturing of MLS Listing Facts; ISV developer can have a bigger impact and can integrate and interoperate most when working from the same Entity Relational Data model to build trust, accuracy, and consistency.

We need, must be capable of seamless data Interoperability, integration to fuel partnerships, teaming and joint development

Need to have artifacts like ERD productions of each RESO Certified Level of Database

The representation of the DD is inadequate for canonical grouping and categorization and development of hierarchies that represent that real world of knowledge, information, and data instantiations.
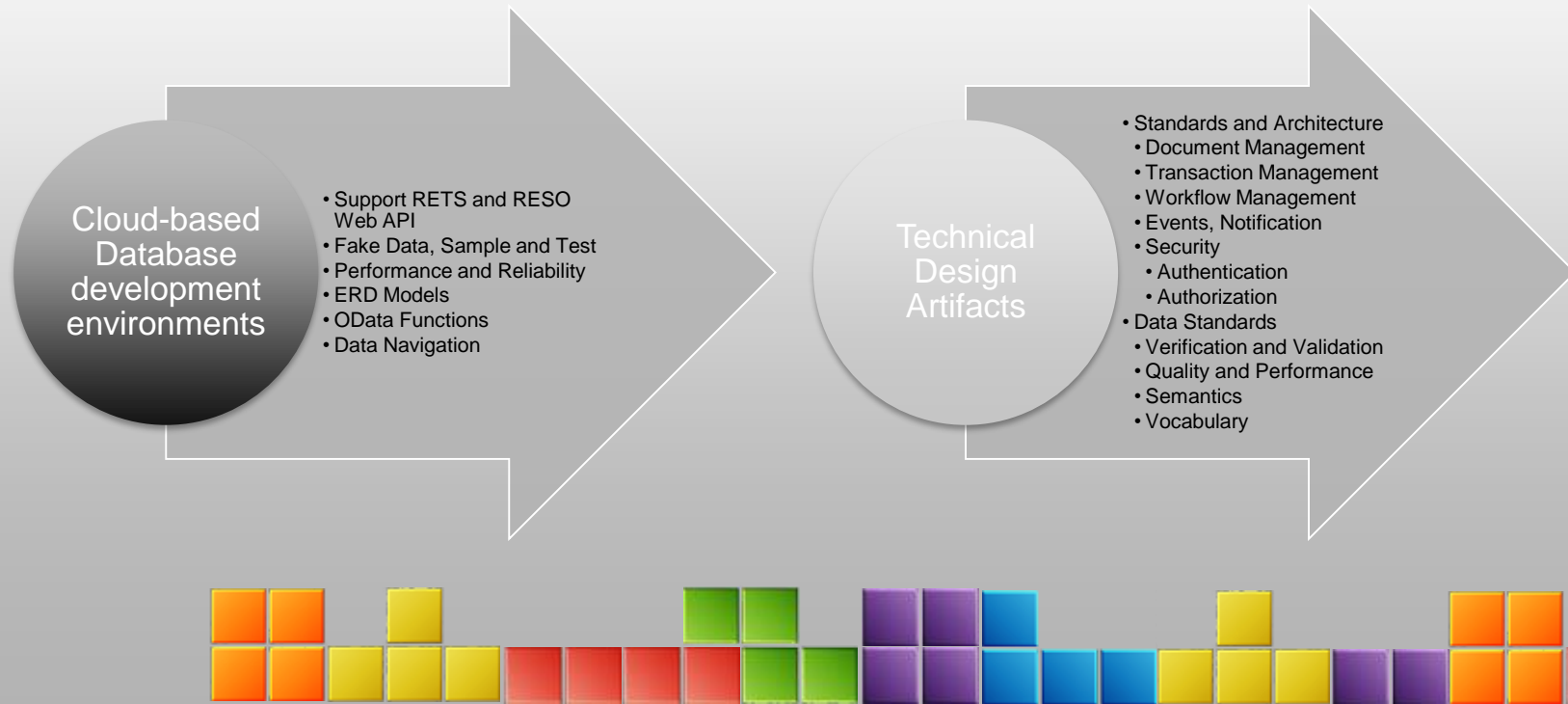
Design and Implementation guides

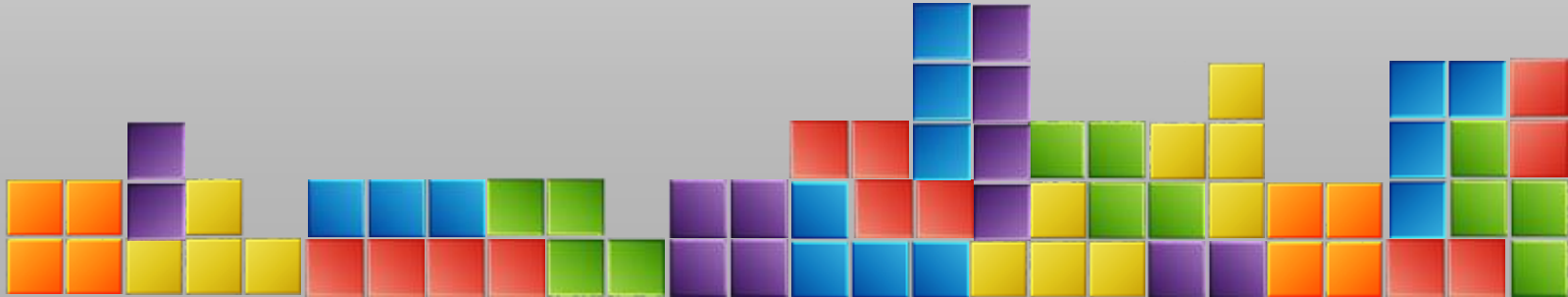UML Models

Data flow models

Process Models

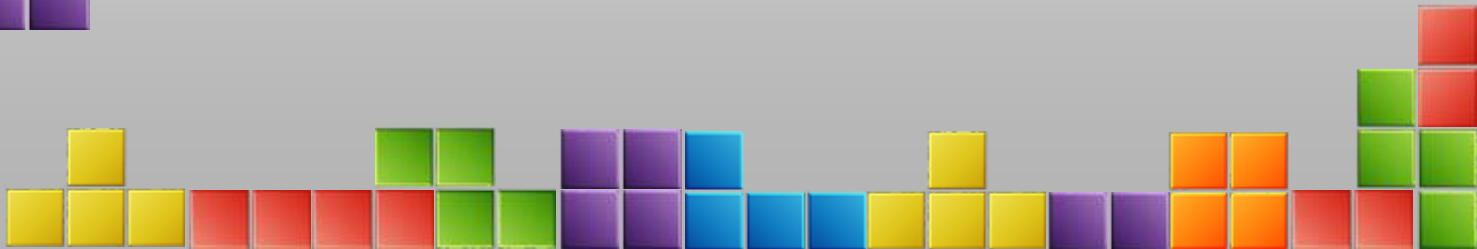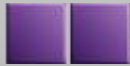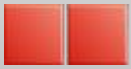# The Right Assemblage of Development Resources

Cloud-based Database development environments

- Support RETS and RESO Web API
- Fake Data, Sample and Test
- Performance and Reliability
- ERD Models
- OData Functions
- Data Navigation

Technical Design Artifacts

- Standards and Architecture
- Document Management
- Transaction Management
- Workflow Management
- Events, Notification
- Security
  - Authentication
  - Authorization
- Data Standards
- Verification and Validation
- Quality and Performance
- Semantics
- Vocabulary

Questions?

Teams – the RESO Way

RESO Data Dictionary Wiki v1.6
TeamMembers Resource
Created by RESO DD Workgroup on Jun 17, 2016
Data Dictionary Wiki Version: **1.6**
The TeamMembers Resource include key fields that tie records from the Members resource to the related records in the Teams resource. The groups within the TeamMembers Resource include the following:

MemberKey (TeamMembers) Field
MemberKeyNumeric (TeamMembers) Field
MemberLoginId (TeamMembers) Field
MemberMlsId (TeamMembers) Field
ModificationTimestamp (TeamMembers) Field
OriginalEntryTimestamp (TeamMembers) Field
OriginatingSystemID (TeamMembers) Field
OriginatingSystemKey (TeamMembers) Field
OriginatingSystemName (TeamMembers) Field
SourceSystemID (TeamMembers) Field
SourceSystemKey (TeamMembers) Field

Teams – the RESO Way

RESO Data Dictionary Wiki v1.6
Teams Resource
Created by RESO DD Workgroup on Jun 17, 2016
Data Dictionary Wiki Version: **1.6**
The Teams Resource include names and other information about teams of members who work together. The groups within the Teams Resource include the following:

ModificationTimestamp (Teams) Field
OriginalEntryTimestamp (Teams) Field
OriginatingSystemID (Teams) Field
OriginatingSystemKey (Teams) Field
OriginatingSystemName (Teams) Field
SocialMedia[Type]UrlOrId (Teams) Field
SocialMediaType (Teams) Field
SourceSystemID (Teams) Field
SourceSystemKey (Teams) Field
SourceSystemName (Teams) Field
TeamAddress1 Field
TeamAddress2 Field

Teams – a simple implementation

RMLS Teams Implementation – draft
As teams become more prevalent in the MLSs defining and supporting them in a (RESO) standards way is imperative. Basically, the team would be another member/subscriber with links to active members.

- A member/subscriber record would need to be created for each team
- A MemberTeam table would need to be defined linking to specific members/subscribers in the Member table
- Use RESO TeamMembers as a template
- Listings could be assigned to a team instead of a member (Seller's Agent)
- Solds could be assigned to a team (Buyer's Agent)
- The seller's and/or selling buyer's would display the team name and contact information
- The team name would be a link with the ability to display (detail) a list of team members, their roles and individual contact information (filtered to only show active team members)
- Members would be allowed to belong to multiple teams and hold multiple roles in a single team
- Listing and sale statistics would credit to the team
- Specific roles for team members would need to be supported, and possibly defined as a picklist
- All MLS system services would be available to the Team just like it is an individual member; branding, roster entry, prospects and auto-email, contacts, CMA, saved searches, ….
- Members to have the option to become the team persona on the MLS system to manage team content and branding; access rules to be define based on team role.

Teams – a simple implementation, cont.

Notes/Options:

- List primary agent as listing/buyers-agent and co-agent as team with statistics attributing the listing to the team
- The initial implementation would require the team to be within a single firm, possibly office
- Dates for joining a team and the role along with a date for terminating team participation or a specific team role would need to be tracked.
- IDX to support team name link with detail of team members (or Primary member replaces the team name)
- Team members would need to identify their listing and sales volume as a member of the team during their tenure
- Should statistical reports denote (highlight) a team verses individual volumes?
- Should a team be required to be 2 or more active members?
- What's the policy/best practice for team name changes; when the primary team member changes or the team significantly changes members?

Next R&D Meeting

 The RESO Research & Development Workgroup meets the first Thursday of the month at 2:00-3:00 p.m. Eastern. Greg Moore is the Chair. This meeting is governed by the RESO Antitrust Policy: www.reso.org/antitrust-statement.

The Next R&D meeting will be Thursday June 7th
2pm EDT / 11am PDT
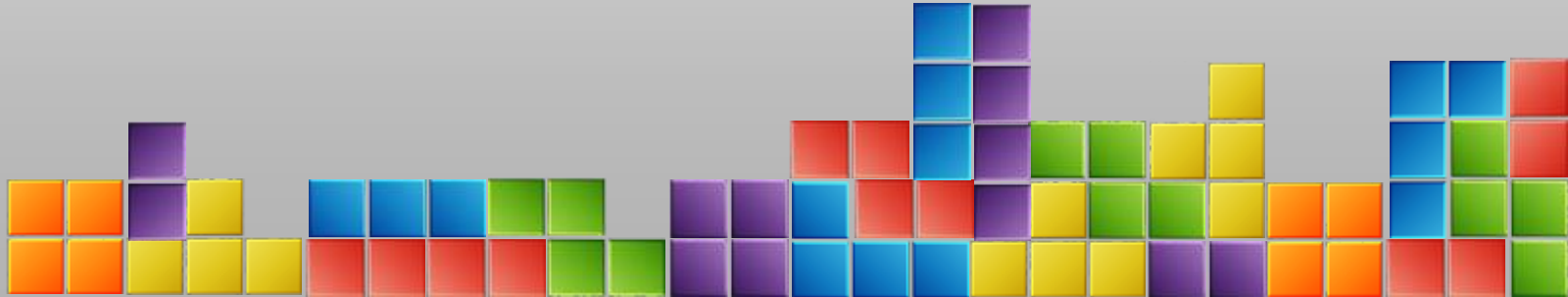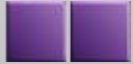
https://global.gotomeeting.com/join/655061925

Call information

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Questions?

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Thank You, Everyone!