California Association of REALTORS® Business Plans For

California Statewide Data Aggregation Service

&

California Statewide Multiple Listing Service

Innovative Solutions

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Executive Summary:

This document contains two separate plans for modernization and simplification of the Multiple Listing Services in the State of California. These plans were created to comply with the motions passed by the C.A.R. Board of Directors at the January 2007 Meeting directing the MLS Working Group to develop and present these plans at the June C.A.R. Directors Meeting. In the course of developing these plans, it was determined that an Information Engineering Task was common and essential to both and it is presented first as a separate section.

Statewide MLS Information Engineering: This task would map all existing MLS data fields to a single, unified schema. This schema would allow all MLSs to participate in statewide initiatives without having to give up any of their existing content. A unified database would be created from this schema to allow for a uniform representation of all of the state's active listings in the Statewide Data Aggregation and/or the Statewide MLS.

This Information Engineering effort will provide the basis for developing statewide standards for MLS content while facilitating the use of all existing systems. Its high value, relatively low cost, and expected rapid completion cause this task to be recommended regardless of the decisions made on the other business plans.

Statewide MLS Data Aggregation Service: This service would collect and make available from one source all the active listings and associated photos from all 70 MLSs in the state. This "one stop" data service would save an estimated $2 - $4 million per year for the state's Brokers and an additional $2-$4 million per year for web and third party authorized users. Agents would no longer have to pay separate MLS fees to search data in other MLSs and an estimated $2 million in MLS participant/subscriber fees would be eliminated. Some of the efficiency gains to web and third party data users could allow for higher fees being charged to them and help offset the cost to operate the aggregation site. It is estimated that the cost of setting up and operating this system would be $5 million per year.

Statewide MLS: This service would consolidate the current 70 MLSs serving the state's MLS subscribers into one organization, one service. The local REALTOR® Associations would be utilized as the local service center with the central MLS providing the technical customer support. Creation and operating of this service is estimated to deliver a $52 million per year savings to the MLS subscribers in the state.

There are no known technical, administrative or communications barriers to creating these services. The barriers to either or both of these beneficial services are local organizations' unwillingness to cooperate and cede local control. There is a greater chance of creating the statewide aggregation service than the statewide MLS. The aggregation service does not threaten local organizations like the statewide MLS.

On balance, many local organizations have invested time and treasure in establishing services that deliver value. There are staff members that have dedicated their careers to these organizations and preservation of self and their achievements are not easily cast aside. The creation of the Alliance in southern California, the substantial efforts of the CDU group also working there and the NCREX and Quattro efforts in northern California are all examples of progress in the making.

Section I. Overview

A. Introduction:

This document has been prepared in direct response to the California Association of REALTORS® (C.A.R.) Directors' request for business plans for both a Statewide MLS Data Aggregation Service and a Statewide MLS service. The requests were in the form of motions passed by a majority of directors. The motions are as follows:

1. "That C.A.R. authorize the MLS Working Group to develop a detailed business plan to create an aggregated Statewide listing database for review at the June 2007 Business Meeting."

2. "That C.A.R. authorizes the MLS Working Group to develop a detailed business plan to create a Statewide MLS, that would comply with the 6 principles, for review at the June 2007 Business Meetings. In addition, local MLS and Associations are encouraged to limit long term contractual commitments extending beyond December 2008."

3. That the Strategic Planning and Finance Committee accelerate their efforts to establish a trusted public site for consumer access to a broad range of consumer real estate needs. (this is not addressed by these business plans but is under the purview of the Strategic Planning and Finance Committee).

4. That C.A.R. Business Plans should take into consideration the technological and value proposition of current data aggregation initiatives in Northern and Southern California.

There is a fundamental belief that substantial operating and cost efficiencies can be achieved in both alternatives mentioned above. The 70 existing MLS services represent a proper approach to MLS services in the past. However, this decades-ago implementation no longer effectively serves the needs of the real estate practitioners who operate in markets that have grown into continuous vast markets covering multitudes of antiquated MLS territories. The MLSs that were/are created to help the real estate practitioner have actually become impediments to the efficient conduct of the practitioners' businesses. In addition to the practitioners' practical needs, there now exists a need to provide consolidated information for all markets for display on broker, franchise, and national consumer internet sites.

Progress has been slow in consolidation of MLS services. The regional MLSs created in the 80s and early 90s are still mostly intact, but progress in further consolidation of these existing regions into total market area services has not progressed. Where there have been attempts, early surges of promised effort to cooperate have mostly deteriorated as individual MLSs choose to close off cooperation and remain local isolated services. Some, like NCREX in northern California are succeeding in bringing consolidation to some but not all the organizations in the market area.

Several area data aggregation sites have been created and are operating. The Alliance in southern California and NCREX and Quattro in northern California have created a non-normalized data aggregation in part of their market. These services do not have normalized nor standardized data, but they are a start in the right direction.

The MLSs fear extinction and the Associations fear further erosion of their involvement in the delivery of this important service. Undertaking the implementation of either of the plans called for will most likely be a contested effort. However, the various pressures coming to bear on the real estate industry demand efficiencies at all levels.

B. Scope

This document sets forth the requested plans along with the attendant functional, technical, financial, organizational and political realities of each approach. Further, per the Directors mandate, the plans seek to take into consideration existing efforts underway within the state's MLS organizations.

C. Guiding Principles:

Based on input from the key stakeholders across the state, the MLS Working Group developed the MLS Working Group Statement of Principles. These principles were adopted by the C.A.R. Board of Directors at their September 24, 2005 meeting *(The accompanying explanations are the product of the MLS Working Group's discussions, but were not included in the motion adopted by the C.A.R. Board of Directors).*

1. MLS data needs to be fully standardized with local options for data field variation.

We believe that local customization of MLS data fields has made the comparison of data between MLSs unnecessarily complex. A lack of uniformity has created artificial boundaries that impede the efficient operation of the market and the ability of REALTORS® to service their clients. We support universal data fields that are standard across all MLSs while also recognizing the need for adding local descriptors.

2. California REALTORS® should have universal access to all MLS data.

C.A.R. members are licensed by the state Department of Real Estate and as such are able to sell property throughout California. Consumers have access to statewide and even nationwide listings through a variety of data aggregation sites on the Internet. In order for REALTORS® to provide their clients with the information they want, California REALTORS® should have access to all listing data in the state. Shared databases and reciprocal agreements should be strongly encouraged.

3. Use of MLS data and its distribution to third parties should be controlled by the brokers who provide the data.

We believe that a listing represents intellectual capital and that the process of creating a listing is a value-enhancing activity. Brokers entering into an exclusive agreement with sellers accept the responsibility for marketing the property and should have control over distribution of the listing data. The rampant and uncontrolled dissemination of valuable listing information on the Internet has increased the cost of doing business and devalued the role of the agent and broker in this process.

4. MLS entities should exist for the benefit of participants and subscribers.

We believe that MLS fees should be set at a rate that gives the MLS and/or the Local Association a fair return for delivery of MLS services. We believe that Local Associations of REALTORS® provide valuable services to their members. These include services and activities that advocate for homeownership, ethics and professionalism in the industry. We believe that local AORs should be adequately and fairly compensated for these services, including those that may be directly associated with an MLS.

5. MLS rules should be uniform and enforced consistently.

Over the years the relevant market area for many brokers and agents has expanded beyond the artificial boundaries of now out-dated MLS regions. As a result, brokers are increasingly operating in multiple MLS environments and facing complex issues related to the disparities in rules, regulations and enforcement governing different MLSs. We believe rules should be established that simplify and enhance the experience of MLS users across systems. To that end we believe that the C.A.R. Model MLS Rules should form the basis to develop statewide rules and standards of enforcement.

6. The MLS Board of Directors should include broker owners with appropriate regional representation.

We believe that broker involvement in MLS governance is critical. The MLS is the single most important business tool in the real estate industry and as such the provision of MLS services should be accountable to all participants. We believe it is imperative that brokers from both large and small firms be given representation on MLS Boards.

California Statewide MLS Information Engineering

Section II. CALIFORNIA STATEWIDE MLS INFORMATION ENGINEERING:

A. Introduction

One major obstacle in giving uniform access to data is the sense that not all information can be accommodated and that the real estate information will lose its precision and completeness unique to each local geographic market. A different approach to unifying data can solve this problem.

In order to create either a statewide data aggregation or a statewide MLS system the diverse data from the state's existing MLS databases must be integrated. Hammering out a standard for such integration would be expected to be a time-consuming and contentious task. Many local associations have been through this when regionalizing already. A standard that required information to be represented in only one way would guarantee that many of the existing MLS data structures just wouldn't fit. Since each MLS chose its database content to support its way of doing business and its own idea of competitive advantage, any standard that forced changes to database content would undermine the business foundation for that MLS and its REALTORS®. A different approach avoids the "winners and losers" dynamic and can avoid this long and painful process.

Information Engineering is an entirely different approach to the outdated standards battle. It allows a uniform set of California Listing Standards to be created that accommodate all of the existing and future content for all of the state's real estate information contained in MLS. This is a necessary first step for achieving either of the business plans presented later in this document.

B. Achieving Standards for Listing Data through Information Engineering

Information engineering is founded on a number of key principles:

1. Information is what the organization runs on; data systems are merely a means of encoding and managing that information. Information contained in existing data systems is important to the organization and should be preserved in any data systems integration or replacement efforts.
2. Each organization determines what information it needs to function effectively; and these needs change continuously as the business evolves. Information needs are defined by the organization itself and not its data systems, which often fail to support these needs fully.
3. The Information Technology unit is responsible for providing data systems that support the organization's evolving information needs and should not constrain access to information.
4. The organization's information needs should be identified, organized, and managed using professional, engineering methods.
5. Agreement should be reached on information needs before attempting to implement data systems to support them.

For either California Statewide Business Plan, an Information Engineering Team would be tasked with creating a common, unified information schema that describes all of the content of

all of the state's MLSs. This schema would capture the specific, detailed meaning of each item of MLS content. Data elements from different MLSs with identical meaning would share the same information element in the schema. If meaning were even slightly different, different information elements would be created. This unified schema would be expanded as necessary to accommodate all of the data elements actually in use throughout the state.

This uniform schema would provide a complete picture of MLS content for the state of California. It would identify which information elements are in use everywhere – these elements could constitute the initial set of required elements for a statewide standard. The information elements that are truly local would be supported in the standard as optional elements. Information present in more advanced MLSs that represents future statewide needs could be candidates for future required elements, and elements that are clearly obsolete could be candidates for being phased out. In this manner, the initial set of standards for California Listing Content could be created to exactly match the existing content of the state's MLSs.

For either California Statewide Business Plan, this unified schema would be used to create and maintain a unified database of all of the content that is present in all California MLSs. Custom subsets of the schema would allow any MLS content to be packaged and delivered using uniform elements populated with data from all MLSs that include those elements. There are a number of technologies available for housing this unified database; but we believe eXtensible Markup Language (XML) is particularly well suited for the task.

The creation of XML has greatly simplified the design and maintenance of complex information metadata. Unlike databases, which must map information into simple tables; XML tree structures can represent the full scope of information content. Every element can be extended to convey additional detail about that element, and the same element may appear in multiple locations throughout the tree.

This capability is especially important when describing real-world objects, like real estate properties, that are unlimited in their scope. XML has been adopted to handle medical and personnel records in their real-world complexity. The US Patent Office is converting to XML for its entire base of patent information. Using XML to describe listing content is a reasonable task – it is an important part of the RETS standard and has been used as the primary data Repository for the North Texas Real Estate Information System since 2003.

Creating and maintaining unified MLS information schema for California requires an information engineering team that is expert in MLS content and operates under the auspices of an unbiased industry organization. A statewide initiative would be appropriate for this task. Well organized and maintained Information Schema for California MLS content is of enormous potential value to all members of the realty community and it provides an invaluable building block toward attainment of statewide MLS integration.

C. Implementation Timeline

The Information Engineering task will be accomplished by a vendor that is expert in performing information engineering for MLS systems. Immediately upon vendor selection, the data that defines existing MLS content ("metadata") will be acquired from these systems and mapped to an initial uniform schema that is based on work already performed by NCREX, CDU, and RETS.

With reasonable response from the California MLSs, the expert vendor should be able to map all systems into the unified schema and make results available to statewide in as little as 6 months after vendor selection. Figure 2 depicts the events and the time estimates estimated.

D. Organization and Staffing

The initial Information Engineering task is entirely a technical one with no governance or ownership issues. Outside consultants or temporary staff of CAR would manage the vendor and insure the cooperation of Associations and MLSs. It is estimated that a manager, up to six Information Engineering Specialists, and an administrative support person would be assigned by the vendor.

E. Cost

The cost of vendor's services is estimated to be $500,000 for the initial mapping of all existing MLS content and construction of the unified statewide MLS schema which would be made available for access and distribution via the Internet.

Subsequent to this construction, the Information Engineering required to update the schema for changes to the participating MLSs and to assist stakeholders in the interpretation and application of the schema is estimated at $200,000 per year.

California Statewide MLS Information Engineering

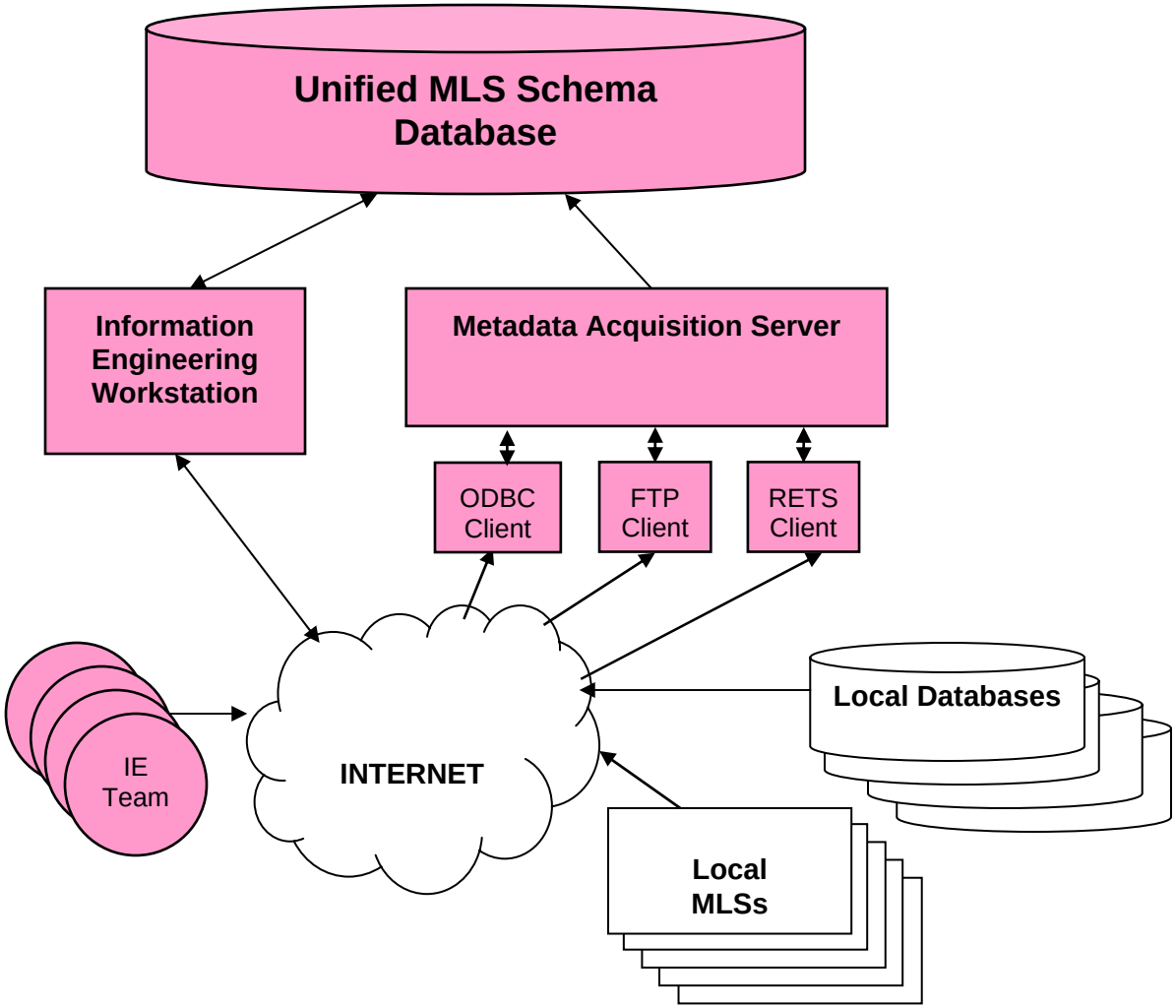

Figure 1

California Statewide MLS Information Engineering Timeline

Tasks	Timeline								
	Month 1	**Month 2**	**Month 3**	**Month 4**	**Month 5**	**Month 6**	**Month 7**	**Month 8**	**Month 9**
Recruit Staff									
Statement of Work and Contract									
Acquire Metadata from all MLSs									
Create Unified Schema for all MLS data									
Quality Assurance									
Publish Statewide Standards									

Figure 2

California Statewide Data Aggregation Service Business Plan

Section III. CALIFORNIA STATEWIDE DATA AGGREGATION SERVICE:

A. Introduction

The California Statewide Data Aggregation Service (CSDAS) anticipates leaving all of the current MLSs in place in an altered form but creating an overarching aggregation of listings. It would contain all the active listings in the state's MLSs and would be cleansed of duplicate listings. The database would serve as the focal point for uniform feed to internet sites and third party suppliers to the real estate practitioners, as well as providing brokers and agents read-only access to listings throughout the state. The CSDAS would fulfill three of the guiding principles established by the MLS Working Group: Principle #1 "MLS data needs to be fully standardized with local options for data field variation." #2. "California REALTORS® should have universal access to all MLS data" and #4. "MLS entities should exist for the benefit of participants and subscribers." It would also address #5 "MLS rules should be uniform and enforced consistently" to the extent allowed by the antitrust laws. This would mean requiring all participating in the aggregation to conform their local rules to the rules promulgated by the CSDAS governing structure.

The first task to be undertaken is the aggregation of MLS data for the active listings and their related photos from the 70 MLSs across California. This data would contain the listings in the native form that each MLS would make available through a RETS or FTP transfer. The second task would use the unified MLS schema created by the information engineering team described earlier to create and maintain a unified database for all MLS listings in the state. This database would provide all content for all MLSs in a uniform presentation.

The creation and operation of this service could be achieved rather rapidly by using any one of the existing services that aggregate all of the state's listings currently with the basic 20 fields. Consideration would be given to the increased task of aggregating the listings with complete information, but this should be achievable with moderate effort and cost.

B. Business Case:

It is estimated that the state's brokers spend $2-$4 million per year dealing with the aggregation of multiple MLS databases to get a fully functional consumer internet site. Agents spend $2 million per year on duplicate fees to get access to listings in neighboring MLS jurisdictions. Additionally, there is an estimated $2.5 million expended by the current partial market aggregation sites. Lastly, there is an estimated $2.4 million spent by third party service providers and public websites. This is an estimated total expenditure of $8.9-$10.9 million per year just to aggregate listing information.

The estimated cost for creating and maintaining a California Statewide Data Aggregation Service (see figure 1) is $5.3 million per year. This represents an estimated savings of $3.6-$5.6 million per year.

California Statewide Data Aggregation Service

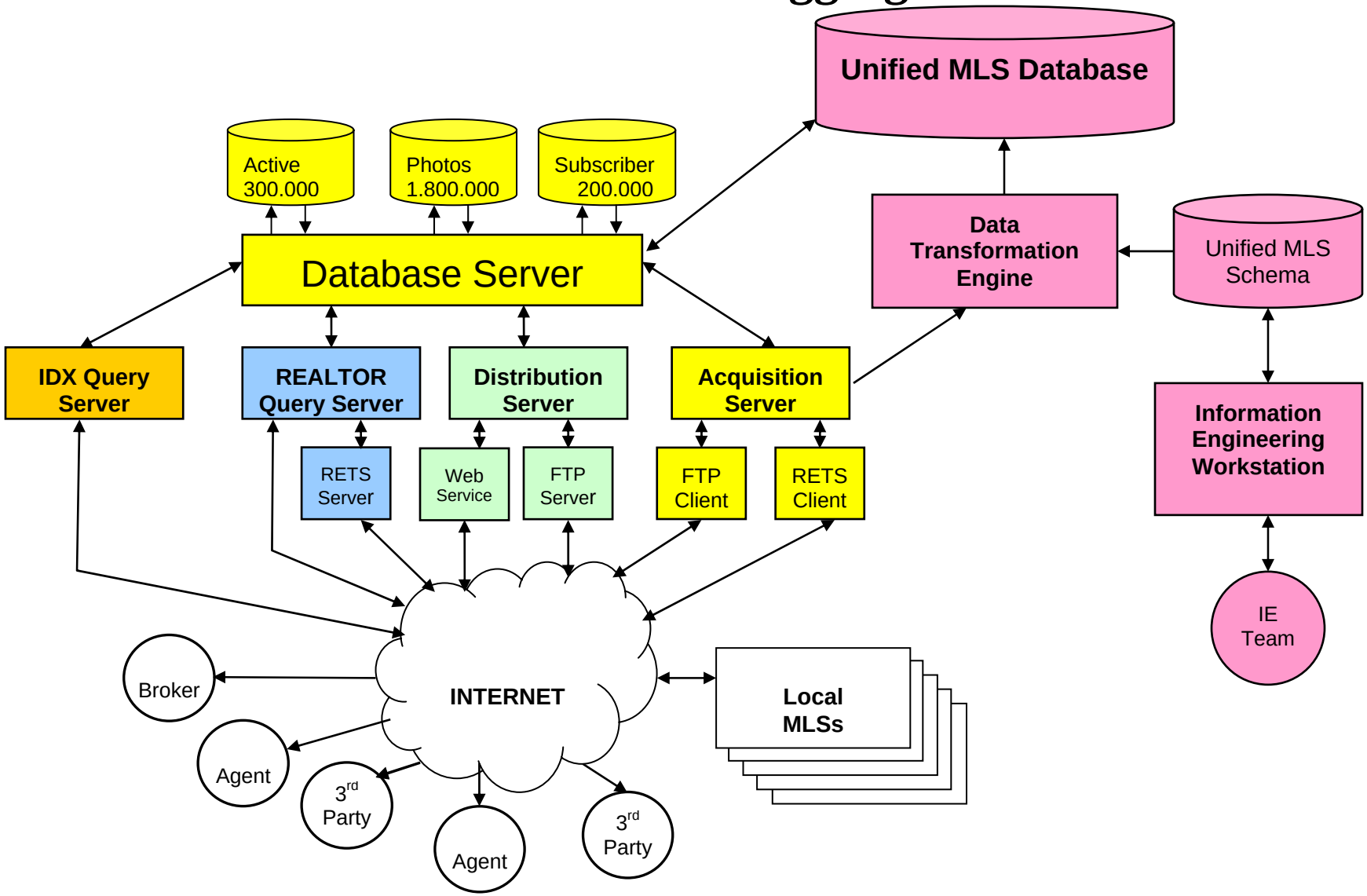

Figure 1

C. Description

1. Technology

The CSDAS system will consist of a server-based system accessible via a web-based user interface. The Application Servers will interact with a Database Cluster and associated Media and File Servers. The CSDAS database will be searchable by a limited dataset (20 data fields) providing access to the complete content of the active listings and their associated photos from all of the state's MLSs. The CSDAS will download listing data from all MLSs using the RETS data transfer standard or FTP if RETS is not available.

The CSDAS database will be accessible for bulk download by FTP and RETS interfaces. The CSDAS design also includes capabilities for direct REALTOR® access via browser query as well as an IDX Public Query that can be utilized by Broker web sites.

The CSDAS will incorporate access rights management, allowing only authorized users to upload or download data.

2. Functions/Features

The CSDAS will access each of the 70 MLSs to download their listing data 2 to 4 times per day. Downloads will be pre-scheduled events, performed automatically by the system. In Phase I the complete listing will be stored in the CSDAS database in the format native to the contributing MLS. In addition, the listing will be indexed for searching by the limited dataset of 20 fields.

If the decision is made to proceed with Phase II, all listing data will also be transformed into the unified MLS database. This Phase II database will provide a uniform presentation of the listing data regardless of the original source MLS. This unified MLS database will allow CSDAS subscribers to develop functionality that operates uniformly over the entire state for the benefit of all REALTORS®.

The CSDAS will give authorized brokers, agents, franchises, web services and other 3rd-party service provider's access to the listing data. Bulk data downloads will be allowed 2 to 4 times per day.

3. Capacity/Performance

The aggregation facility must, as a minimum, house all of the office, subscriber, and listing data for all of the MLSs in California, including their associated attachments – primarily photos. Surveys and analysis have led us to believe that the following counts are reasonable targets for such a facility:

Active Listings: 300,000
Photos: 1,800,000 (6 per listing)
Subscribers: 200,000

The aggregation facility must have storage space for all of the above primary records. It must also have space for expansion of those records as well as search indexes, logs, backup, and

administrative data. These files could require several times the amount of storage used by the base records.

4. Interfaces

The primary interfaces for the CSDAS will be RETS-compliant downloads from the MLSs and RETS and FTP IDX downloads to authorized brokers, agents, franchises, web services and 3rd party service providers. The CSDAS may also provide a browser query interface for REALTORS® and IDX query interface to be used by broker websites.

5. Role of MLS

The MLSs will continue to provide the valuable services that they have traditionally offered. The MLSs will take on the additional task of facilitating several daily data pulls to the CSDAS of updates to the listing data base. Additionally, the MLSs may elect to download any or all data contained in the CSDAS for the use of their subscribers. The MLSs will also conform to uniform MLS rules and enforcement of them.

Since it is the intended purpose of the CSDAS to facilitate consolidated data feeds to authorized brokers, agents, third party providers and web sites, this task will be lifted from the responsibility of the local MLSs. The MLSs are not prohibited from providing their own data to organizations in need of such data for local usage.

D. Implementation Timeline

It is the intention of the CSDAS to engage the services of a vendor for this service that is familiar with, and currently offering similar services. Although the number of data pulls and the requirement to house complete listings are more than many current aggregators might have undertaken, the incremental workload should be manageable.

Given that there are a number of aggregators who currently pull all or a large number of the states MLS listings (albeit partial), there are choices and the fact that they exist at all will make the timeline for implementation much shorter. Once the requirements are agreed upon, the desired throughput calculated, and the rules are set, a requirement document can be circulated for bids. From date of selection, the service could be in operation in as little as 6 months. Figure 3 depicts the events and the time estimates estimated for each.

California Statewide Data Aggregation Service
Implementation Timeline

Tasks	Timeline											
	Month 1	**Month 2**	**Month 3**	**Month 4**	**Month 5**	**Month 6**	**Month 7**	**Month 8**	**Month 9**	**Month 10**	**Month 11**	**Month 12**
Staff Recruiting												
Select Consultant Team												
Creation of Request for Proposal												
Review Proposals												
Select Vendor-Negotiate Contract												
MLS data pulls from MLSs												
Transform Data into Unified Database												
Testing and Quality Assurance												
Accumulate Data Subscription Contracts												
Begin Operation												

Assumptions:

1. Agreements with local associations and MLSs are in place
2. Selected vendor has direct experience with MLS data aggregation

Figure 2

Throughput & Technical Issues

- **70 MLSs providing data 2-4 times per day**
- **Standardization in a minimum of 20 data fields**
- **Elimination of duplicate listings**
- **Resolving property classes**
- **Resolving listing areas standard (area vs. zip)**
- **Resolving MLS number issues**
- **Disparate data fields**
- **Bandwidth to support upload/download traffic may range from T-3 to OC-12 capacity.**
- **Data storage requirements will be 1.5 to 2 terabytes**

E. Organization and Staffing

Figure 3

Other than the organization necessary for Governance and rules enforcement, there is little to be done outside of managing the vendor and insuring that data feeds are authorized and occur when they should. Most all the business will be contracted to the vendor and the remaining tasks should be achievable with minimum staff and expense. It is estimated that a manager, an analyst, two Information Engineering Specialists, and one administrative person should be adequate for staff.

F. Cost

The cost of the base operation is estimated to be $500,000 per year.
Staff salaries will be based on market rates.

The cost of vendor's services is estimated to be $4.8 million annually.

It is estimated that an additional $500,000 should be set aside for start up costs.

Estimated total cost of the service will be $5.3 million annually.

The total expenditure by all stakeholders to aggregate data presently is $8.9-$10.9 million annually. The CSDAS would provide a potential savings of $3.6-$5.6 million annually.

G. Benefits Summary

1. Cost savings and operational efficiency.

2. Begin to foster a more consistent set of operating guidelines and rules for data use.

H. Challenges

1. Resistance from local MLSs and Associations

2. Agreement on ownership and governance

3. Operating Rules and most specifically who decides who gets data and what the data might be used for.

4. Data Security: A small but increasing number of MLSs have instituted strong data security measures. These organizations would most likely not allow data that is secured at the local level to be made available to others who have not instituted acceptable (to them) security measures.

5. Efforts underway in local markets as a beginning to data sharing. CDU efforts in southern California, the existing Alliance project in southern California, NCREX in northern California and the Quattro project also in northern California are examples of local data aggregation projects.

6. Time necessary to seek agreement to create and begin the project.

7. Broker impatience with the difficulty of aggregating data and the associated costs.

California Statewide
Data Aggregation Service
Organization Chart

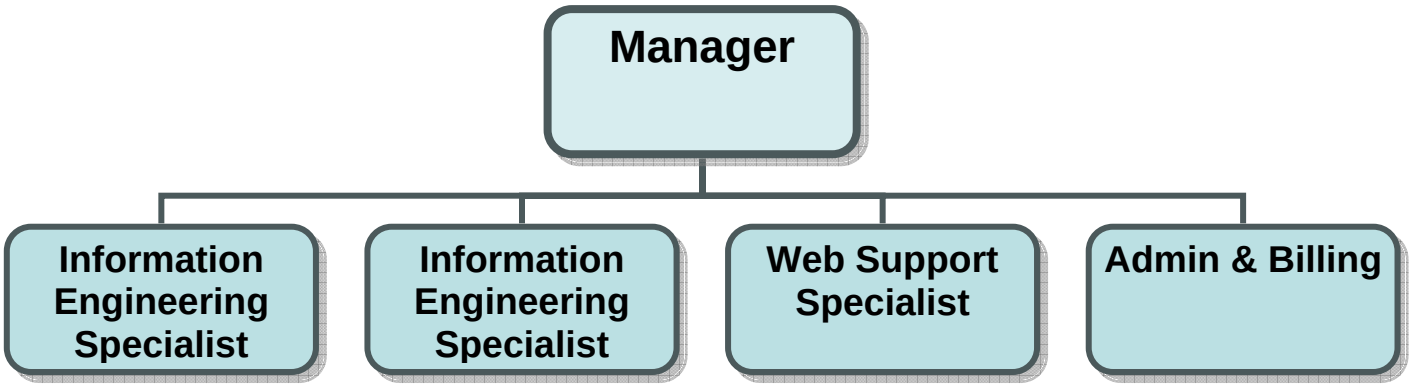

Figure 4

California Statewide Multiple Listing Service Business Plan

Section IV. CALIFORNIA STATEWIDE MULTIPLE LISTING SERVICE (CSMLS)

A. Introduction

If multiple listing was a new idea, the design would most likely be done to create a statewide or possibly even a nationwide technology based solution. The size of the database and the communications infrastructure required for such services are no longer out of the bounds of modern technology and internet communications services. But such was not the case. Multiple listing services emerged out of local markets as first loose leaf sheets, then to published MLS books and finally as online services. Markets were mostly self-contained and there were few if any real estate professionals that worked in more than one market area.

Eventual growth in metropolitan areas saw suburban markets begin to grow across MLS boundaries and more real estate professionals needed to know larger market areas to serve their customers and clients. In extreme instances, real estate professionals might necessarily join and buy services from as many as 6 different MLS services to serve an enlarging natural market. Even if the agents could sustain the cost of this market condition, the inconsistency of learning different systems and duplicate entry of listing in multiple services became onerous.

The market solution was to consolidate a number of MLSs into a single service. This Regionalization effort created what are today's regional MLSs that have become powerful market forces in most major metropolitan areas. Many continue to grow in serving "border" areas with high levels of technology and service. Predictably, continued growth in broad based market areas such as southern California have these regional MLSs bumping into each other and now have created the same conditions they were originally formed to eliminate.

The real estate professional is now faced with similar conditions that earlier had created the need for regional MLSs. In northern California, a San Francisco area real estate professional might need data from the San Francisco MLS, EBRDI MLS, and Contra Costa MLS. If they ventured east they might also need to consider listings resident in the Central Valley MLS. All of this seems to beg the question, why not one MLS to serve these large markets.

The question the California Association of REALTORS®' Directors have asked, is why not an MLS for the entire State of California. This section of this document seeks to answer that question with a plan and discussion of what such a service might be and how it might come into being. **Further, the Statewide MLS would specifically address and satisfy all 6 of the guiding principles adopted by the MLS Working Group.**

B. Business Case

It is estimated that the sum total costs of current MLS services, data distribution and data aggregation throughout the state is $125 million annually. The efficiencies of a single organization contracting and delivering these services to the entire state are estimated at $43 million to $50 million for a potential cost savings of $60 to $75 million annually. Although a substantial savings will be realized in vendor costs, an even greater savings will result from the elimination of 70 organizations duplicating efforts throughout the state.

California Statewide Multiple Listing Service

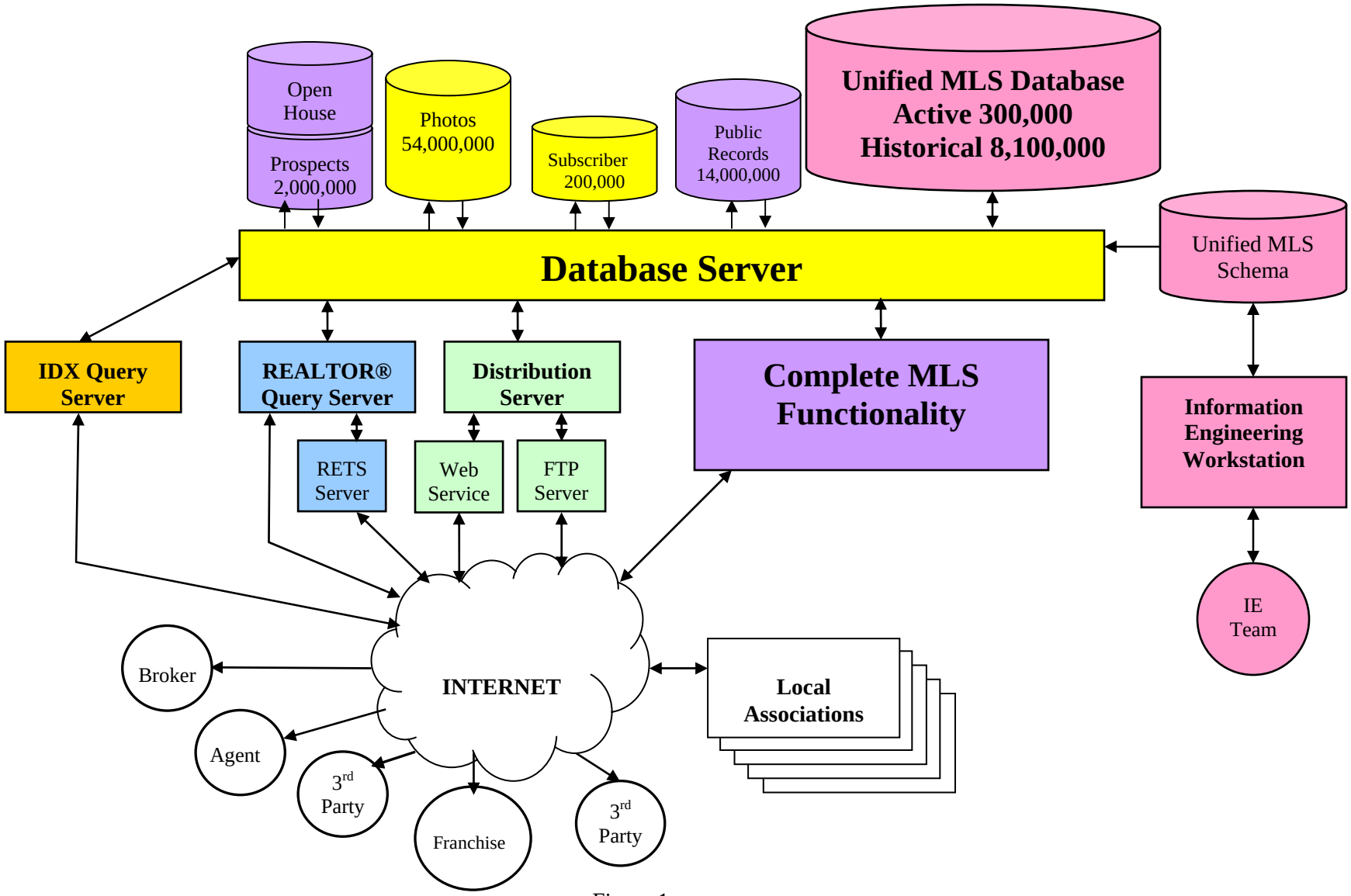

Figure 1

C. Description

1. Technology

The Statewide MLS will be an integrated web-based facility with state-of-the-art components including firewall, load balancers, application servers, database server clusters, and media servers. Systems are sized so that the loss of a single device will not impact performance. This also means that CSMLS can be easily scaled to accommodate higher user loads by simply adding in one or more servers.

The databases can be set up for multiple levels of availability and performance. If the databases are at the same location, redundant database architecture can be used for all the data storage. If they are located at different locations, then separate smaller databases can be used for the data storage at each location.

At a minimum, the CSMLS will likely have multiple data centers with users distributed over the systems and total redundancy of the database in each location. Databases can be at the same site or at geographically separate locations. These databases are kept synchronized by real-time data links. Maximum bandwidth demands are associated with media servers which are also expected to be hosted on multiple sites for redundancy and load management.

The architecture will support the system being hosted by multiple vendors in one physical location or two or more separate locations for disaster recovery purposes. The most prudent design may even include facilities in locations outside of California.

2. Functions/Features

The California Statewide Multiple Listing Service (CSMLS) will be a complete MLS service serving the 200,000 plus California real estate professionals. It will contain all active and historical listings, and public records for the state. It will also contain the subscriber, member, and office databases for the entire state. Functionality will include all features available on the most desirable MLS service and will deliver 99.99% reliability with a maximum of 5 second response time to a two level search.

The database will contain unified standard listing data, will support multiple browser front ends and the system will be configured to be redundant and fault tolerant. This unified listing database will include all of the data elements currently supported by the 70 existing MLSs
The service will also serve as a data supplier to broker, agent franchise, web services and 3rd party service providers. The existence of a standardized statewide MLS database will facilitate data supply to all authorized recipients.

CSMLS Features:

- Listing Maintenance
    - Add
    - Change
    - Incomplete
    - Copy
    - Transfer
    - Supra Server/Lockbox Functions
- Search
    - Quick search
    - Full search
    - Saved search
    - Map search
    - History search
    - Adjustable CMA Creation From Within Search Results
    - List number
    - Address
    - Multiple Address
    - My Listings
    - Office listings
    - Office/Member
    - Saved Listings
    - Multi-Format Listing Reports in Public & Private Versions
        - E-Mail Integration
        - Listing Tour
        - Flyer Generation
- Prospecting
    - Prospect management
    - Prospect summary
    - Presentation
    - Reverse prospecting
    - Automatic emails
    - My sent emails
- Tax Records
    - Full Tax Search
    - Address Search
    - Parcel Search
    - Saved search
    - Property Tax Records
    - Views
- Statistics
    - My Production
    - My Market
    - Inventory & Production
    - Market Trends
    - Rosters
- Maps
    - Regional Maps

    - Aerial Overlay
    - Parcel Overlay
    - Grid Overlays
    - Street Overlays
    - Zip Code Overlay
    - Flood Zone Overlay
    - Polygon, Rectangle and Radius Search Integration
    - Driving Directions
    - MLS Area Maps
- Calculators
    - Closing Cost Estimator
    - Amortization Schedule
    - FHA Loan Qualification
    - VA Loan Qualification
- Ancillary Functions
    - Hot Sheet
    - Tour/Open Houses
    - Market Areas
    - Listing and Contract Forms Interface
    - Listing Input Forms
    - Member Lookup
    - Daily News
    - Bulletin board
- Export
    - Multiple Formats
        - Comma-Delimited
        - Top Producer
        - Agent Office
        - Pocket Real Estate
        - Realigent/Lightning
        - eNeighborhoods
        - Realty Tools
- Transaction Management
    - Knowledge of Associated Documents
    - Interface With External Systems (e.g. relay)
- User Preferences—Customizable Settings
    - My Profile
    - My Views
    - My Reports
    - My Quick Searches
    - My Exports
    - General Preferences
    - Member Profiles
- Administration
    - Subscriber Management
    - Rights Management
- User Guides
    - System Manuals

    - System Tutorials
- Support
    - Live Online
    - Telephone
    - E-Mail
- Training
    - Online
    - Classroom

3. Capacity/Performance

The system will initially need to be scaled to hold approximately 300,000 active listings, 8,100,000 historical listings and their associated photos. The system will require approximately 4-5 terabytes of data storage capacity and approximately 1 terabyte of system server memory to manage system traffic. Depending on the term for historical data storage, the system will require an incremental increase in data storage capacity annually.

Each physical database will be accessed by one or more servers. The number of servers is based on expected system load and the capacity of the hardware that it is implemented on. If a single server system is preferred to support the entire system load from a single location, then the system will be setup to access the database in a dedicated location. If more than one server location is desired, then server clusters will be implemented in order to allow the single database to be simultaneously accessed by multiple servers.

While no empirical data exists showing nominal performance and response times for a 200,000 user MLS system, data is available for a large MLS system with comparable data capacity. Metropolitan Regional Information Service (MRIS), based in Rockville, Maryland is the largest MLS in the country. MRIS serves 60,000 users and reports the following performance statistics for their systems:

- Maintains 309,000 listings
- Maintains 2.4 million historical listings
- Serves 2.5 Million Transactions Per Day
- Serves 45 Million Records Per Day
- Average Records Per Minute – 7,000
- Peak Records Per Minute – 27,000
- Search Results return to the user in an average of 300 milliseconds

4. Interfaces

The system will allow browser-based end-user interaction and well as RETS, web service, and FTP/bulk upload/download access.

5. Role of the Local Association

The REALTOR® Associations will continue to be the touchstone for the members/subscribers. The subscribers will join the MLS through the Associations and the Associations will use the common database to maintain all the records, collect applicable fees and be responsible for billing and collection. The local Associations would also be able to price the statewide MLS service however they want so that they would maintain budget control over their local operations. Training and primary subscriber communication will come through the

Associations. Technical customer service will be provided through a centralized call center operated by CSMLS.

The Associations will be the initial front line for holding disciplinary hearings although any appeals will be held through a regional appellate system (see section on rules).

The Associations would be the strong local connection between the CSMLS and the subscriber.

D. Implementation Timeline

The implementation timeline for the CSMLS would depend entirely on the willingness of local MLSs to join the effort and sunset themselves as organizations. The logical, technical and operational issues can be ready as soon as a vendor selection is made and a contract signed. The simplification which would result from the implementation of a state wide MLS would be of immense practical and financial benefit to the MLS Subscribers and Participants. One MLS, one set of rules, one organization, etc.

Logically, even with cooperation and permission, a state wide MLS implementation would take 2 years. Vendor contracts would need to expire and some logical sequence of merging organizations would ensue. Even if the selected vendor had a substantial market share of the current California MLS market, there would still be 50+ organizations and operations to be merged and thousands upon thousands of persons who would need training and handholding.

Logically, if the selected vendor has market share in California, their customers would be the easiest to move to a consolidated organization. Then the logical sequence of merging others would be undertaken. *It is worth noting that it is entirely possible to utilize more than one vendor for this project, who would work cooperatively under a joint implementation plan.*

Buyouts--Early Terminations--Personnel Guarantees:

There are a number of options available to speed the implementation of a consolidation of local efforts and local organizations. Vendor contracts have differing terms and termination options. It may be prudent to negotiate a termination to an existing contract to facilitate total market area incorporation into an effort. Similarly, key persons may have contracts to be considered. Some may be vital to the continuation of the effort and still others may be vital to the successful conclusion of an effort. In either case, the use of contracts, guarantees, and/or buyouts may be in order.

Taken collectively, these actions may be a substantial budget item. Each would have to be considered as to the impact, positive or negative, on the achievement of the strategic objectives of the project and its overall financial impact on the cost to the state's MLS subscribers.

E. Organization and Staffing

Consistent with the governance outlined below, the organization size and complexity would depend on the nature of the contract with the selected vendor. Current MLS vendors offer several levels of service and it is recommended that CSMLS contract for a high level of service from the vendor for at least the initial contract period. Even nonstandard vendors bidding of a contract of this size and complexity most likely would offer whatever level of service was called for in a request for bids.

The staffing levels will be in direct proportion to the rate at which MLSs are merged into the central system and organization. High level staff would necessarily need to be in place from the onset with necessary legal and administrative support. Additional lower level persons can be added as the organization grows and assumes more responsibility. Figure 5 outlines the eventual organization.

Subsequent to commencement of full operation, the then in place leadership/governance would determine the tasks to be shifted from the vendor to the CSMLS organization and when such a shift might occur. Staff salaries would be based on market rates.

System & Database Size

- **300,000 active listings database**
- **8,100,000 historical listings database**
- **50,400,000 photo database (6 per listing)**
- **Approx 13,000,000 public records database**
- **4-5 terabytes for data storage**
- **Depending on the term for historical listing data, the storage requirements will incrementally increase annually**

Throughput & Technical Issues

- **Up to a maximum of 50,000 simultaneous users**
- **Up to 100,000 third-party IDX data pulls per day**
- **Subscriber rights management**
- **Bandwidth to support subscriber/download traffic of up to OC-12 capacity.**

Figure 2

California Statewide Multiple Listing Service
Implementation Timeline

Tasks	Timeline													
	Month 1	**Month 2**	**Month 3**	**Month 4**	**Month 5**	**Month 6**	**Month 7**	**Month 8**	**Month 9**	**Month 10**	**Month 11**	**< … >**	**Month 23**	**Month 24**
Staff Recruiting														
Select Consultant Team														
Create Request For Proposal														
Evaluate Proposals/ Select Vendor/Negotiate Contract														
Create Overall Project Plan For Vendor-Staff-Consultants														
Information Engineering Support														
Create Unified Schema for all MLS data														
Publish Initial Statewide Listing Standards														
Convert 1st MLS														
Data Conversion														
Training Of Association Staff														
End User Training														
Activate Tech Supt/Cust Svc Center														
Convert Remaining MLSs														
Full Operation														

Assumptions:
1. Vendor selected will be familiar with MLS industry.
2. Agreements with local MLSs and Associations are in place.

Figure 3

F. Cost

Estimates from several sources put the MLS operation at the 6-10 dollar per member per month range and an estimated 5-8 dollars per member cost of the Associations delivering the services outlined in Role of Associations above. We have assumed 200,000 subscribers.

Yearly cost of MLS operation estimated to be $8 per member per month = $19.2 million.

Association service delivery cost estimated @$7 per member per month = $16.8 million.**

Operating cost of CSMLS estimated @$3 per member per month =$7.2 million.

Total = $43.3 million.

Estimated current yearly cost of MLS and data aggregation in California = $125 million.

Estimated yearly cost of CSMLS - $43.3 million.

Annual estimated savings = $56.7 million.

**Note: This is only an estimate. Each Association will determine the price it will charge its subscribers. CSMLS will charge each Association a "wholesale" price for its services. This will allow each Association to determine the services it will provide and the end user price it will charge its subscribers.

Buyouts--Early Terminations--Personnel Guarantees:

There are a number of options available to speed the implementation of a consolidation of local efforts and local organizations. Vendor contracts have differing terms and termination options. It may be prudent to negotiate a termination to an existing contract to facilitate total market area incorporation into an effort. Similarly, key persons may have contracts to be considered. Some may be vital to the continuation of the effort and still others may be vital to the successful conclusion of an effort. In either case, the use of contracts, guarantees, and/or buyouts may be in order.

Taken collectively, these actions may be a substantial budget item. Each would have to be considered as to the impact, positive or negative, on the achievement of the strategic objectives of the project and its overall financial impact on the cost to the state's MLS subscribers.

G. Benefits Summary

1. $50 million in annual savings

2. Simplified operation and organizational structure

3. No artificial boundaries imposed on agents and brokers

4. The business of real estate will be made more logical and manageable.

H. Challenges

1. Staunch Localism: Volunteers have dedicated millions of hours over decades building local MLS organizations and they will resist with much effort the sunsetting of these organizations even for a substantial cost savings.

2. Established and powerful MLS staff personnel will resist this disintegration of their organizations for professional and personal reasons. Buyout options can be explored to mitigate this issue.

3. Belief that "markets are different". Most efforts of MLS consolidation have necessitated a negotiation of who must give up what and why. Can one service serve all of the various areas and differences within the state? Information engineering may be able to accommodate most of these concerns.

4. Data Security: A small but increasing number of MLSs have instituted strong data security measures and these would most likely not allow data that is secured at the local level to be made available to others who have not instituted acceptable (to them) security measures.

5. Inherent distrust of things "bigger". Loss of local control in direction and costs. Local Associations would still have control of the fees charged, though the vendor costs would be the same for running the statewide organization. At the local Associations' options, regional MLS organizations could dissolve and distribute their assets to their shareholders or member organizations.

6. Blocking: Organizations and vendors who attempt to block this project with contract extensions or control changes which hamper any effort to force consolidation.

California Statewide MLS
Organization Chart

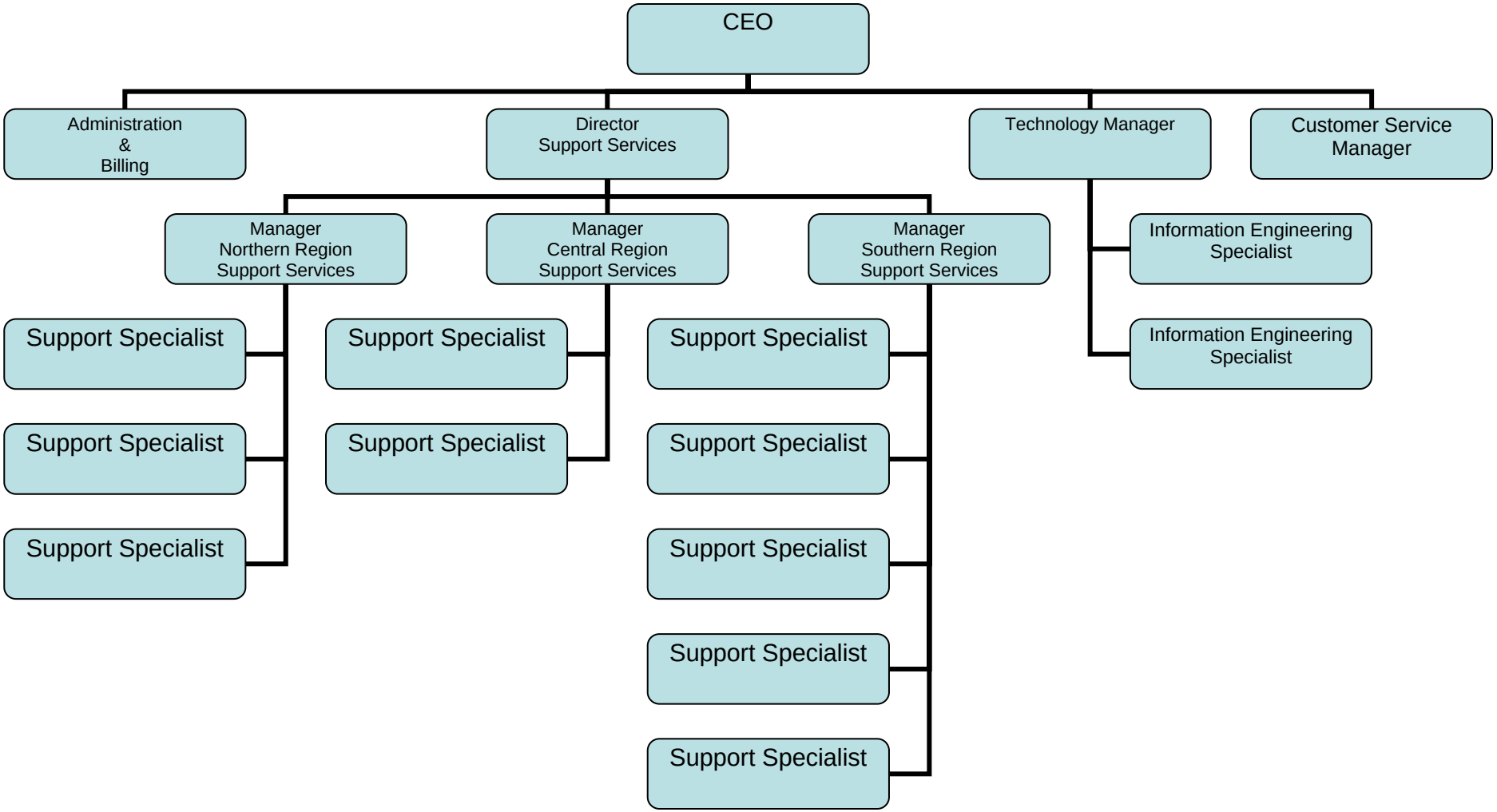

Figure 5

Pre-Condition To Implementation of CSMLS

- **Information Engineering/Data Standards**
- **Establish Role of & Relationship With Local AORs**
- **Technical Design**
- **Role of Local Associations/MLSs**
- **Service Delivery Standards For Vendor/CSMLS/AORs**

Figure 6

Governance

SECTION V. GOVERNANCE, LEGAL STRUCTURE AND MLS RULES

A. Guiding Principles.

The governance of a statewide effort is guided by several principles: efficiency, representation, transparency and accountability. Principle six of the MLS Working Group requires broker representation as well as regional representation. The board of directors must be small enough to be able to function effectively and react quickly to issues requiring decisive action yet be representative of both the broker owners and salespersons using the system. It must also be accountable and transparent so that all stakeholders in the system can effect change if necessary. Any system must give members confidence in the selection process but should not be so cumbersome as to make change difficult and elections costly both to the individuals and the statewide effort itself—whether it be an aggregation or a statewide MLS. Therefore, when possible, this governance plan capitalizes on the current travel and facilities structure already in place for tri-annual meetings for C.A.R. though it is not owned by C.A.R. nor governed by the C.A.R. director structure.

Finally, some have experienced MLSs with a culture of secrecy and barriers between the local association shareholders and the MLS entity itself as well as lack of responsiveness to broker and agent needs. Since this model anticipates using the local associations as part of the delivery of the service, open communication and transparency between the brokers, the local associations and the statewide MLS governing body is essential. This transparency requirement will be built into the system to insure trust and fairness with the primary priority of providing the best and most cost effective statewide MLS services to the members. It is assumed this objective is shared by all stakeholders—to provide the most cost effective and efficient statewide MLS services to members and that this objective will be enhanced by communication with all entities involved in the delivery of statewide MLS information and services.

B. Common Elements

Both an Aggregation service and a statewide MLS would need governance in order to set up a decision making structure for vendor decisions, staffing, policies regarding distribution of data and common rules.

Both the statewide MLS and the aggregation service anticipate the local AORs being the portal of entry for access to the service. Both anticipate local control of pricing of access to the statewide MLS or aggregation and front line responsibility for enforcement of rules.

An aggregation service would still leave the local standalone AOR MLSs and Regional MLSs intact with their control over local vendors and local governance. Local AORs could determine policies consistent with their participation in the statewide MLS or aggregation service under whatever local governance they see fit. In many instances participation in the statewide effort would be similar to the ways in which they participate in regional MLSs, but with access to the entire state's MLS data of the participating MLSs. However local Regional and AOR MLSs would be required to adopt the uniform Statewide MLS rules and enforce them uniformly in accordance with the statewide system. Additionally, data aggregation requires some central decision making on data standards, mapping, and rules relating to the feeds emanating from the

aggregation. For simplicity, the same governance structure is proposed for both the aggregation and the statewide MLS but the scope of its powers would be different.

C. Legal Structure and Governance

Selecting the type of entity and ownership involves several overarching considerations. Given the size of California and its brokers, fractionalized ownership models, either as a stock company or a limited liability company, would almost always involve costly security registration and regulation issues. However, these models would allow more flexibility in distributing excess proceeds in the event the entity has excess profits in a given year. Since it is not the primary purpose of the statewide MLS or aggregation service to make profits at the expense of the membership, multiple ownership structures that were burdened with legal and regulatory costs do not have apparent corresponding benefits to the brokers and agents.

A nonprofit (but not tax exempt) membership organization allows for multiple stakeholders to be part of what is closest to the "ownership" structure without the securities issues. However, this would limit the ability to distribute dividends and would only be relevant for distribution of assets upon dissolution. Again, given that the purpose of the statewide MLS is to save brokers and sales agents money and enhance efficiency, this does not appear to be a large detriment.

The structure would be a nonprofit (but NOT tax exempt) mutual benefit California Corporation with three classes of membership: (1) participating local Associations of REALTORS® (2) broker owners and (3) salespersons. It would be governed by the board of directors as set forth below.

The annual membership meeting would be held by convening the delegates selected through the governance process (MLS Representatives). These MLS Representatives would be chosen by the local AORs participating in the statewide service and could be the same as the same as their C.A.R. directors at the local AOR's option. Only this delegate body could change the bylaws, sell major assets, dissolve, or change the overall business structure set forth in the governing documents. The delegate body would have the power to remove directors with or without cause. However, other than these extraordinary events, all power would be vested in the statewide entity's board of directors. This delegate body could meet in conjunction with the C.A.R. Expo or by special meeting at a designated location. Alternative electronic and remote balloting would also be allowed if sufficient procedures for validation were in place.

Other governance structures are available such as those patterned after IMPAC or CREPAC with nominating committees and regional nominations but also with the ability to run by petition. These may well be less cumbersome and could be explored as alternatives should the C.A.R. directors so chose. The important feature to assure that the entity is accountable and that changes can be made if those in power are not responsive to the membership's needs or financial matters are not sufficiently transparent with appropriate checks and balances. Those structures that are self perpetuating by incumbent directors or staff lack such accountability.

Over the last thirty years, California MLSs have been the target of antitrust litigation that can easily last a decade and cost millions to defend. N.A.R. has traditionally provided insurance but it rarely has been adequate to defend these cases. C.A.R. and N.A.R. has funded these defenses out of REALTOR® dues dollars. As a stand alone entity, the statewide MLS would collect its own reserves and contingencies for significant lawsuits. Due to the high visibility and historically litigious arena in the state, and the current enforcement priorities of government officials, it is likely that some major litigation will occur in the next decade. These reserves should also be sufficient to assist local AORs providing portals to the statewide MLS when the funding exceeds the NAR insurance coverage of the local activity. In short, its revenues should cover its costs both current and projected.

Power of Aggregation Service Differentiated

While the powers granted to the statewide MLS entity would be complete, the scope of powers to an aggregation service would be a bit more limited:

The entity overseeing the aggregation service would be responsible for the following:

1. Hiring vendors for the information management of fields.
2. Maintenance of the information standards
3. Determining the IDX Rules for the statewide feed
4. Licensing policies for the data as it relates to the statewide aggregation in accordance with Principle #3 to allow brokers control over the data.
5. Adopting MLS Rules.
6. Facilitating distribution of aggregated data locally as requested by a local AOR.
7. Overseeing all licensing contracts to brokers and third party providers/software companies and third party aggregators.
8. Determining the costs a participating local MLS would pay for the establishment and maintenance of the aggregation system
9. Determining the costs for providing feeds to local brokers for IDX feeds and also for third party vendors.

D. Governing Body

Board of Directors:

Composition: The board of directors will be composed of 15 members as follows:

- 3 broker owners from the top 25 largest brokers
- 2 broker owners from any size, with one from the north and one from the south
- Five agents/brokers- nonowners from five regions of the state
- Two outside directors
- C.A.R. MLS Committee Chair
- Local Association Executive
- Local MLS CEO
- C.A.R. President-Elect

Selection:

Broker Owners of Large Firms: The three directors from the largest 25 real estate firms shall be selected by the largest 25 broker owners. Only those broker owners whose firms are participating in the state wide effort (either aggregation or MLS) will be eligible. The determination of the largest 25 will be made initially by REALTOR® membership of the firms and DRE records as of the date of formation and thereafter in accordance with the records of the statewide MLS.

Broker Owners: The two directors representing firms of any size shall be selected by regional nomination from broker owners and voted upon by MLS Representatives[1] from participating regions. One broker owner shall be from the northern part of the state and another will be from the south.

Broker or Salesagent Nonowners: The five sales agents or brokers (nonowners) are selected through regional nominations and voted upon by MLS Representatives from participating regions.

Outside Directors: The outside directors will be chosen due to their business acumen and stature in the community. Nominations will be submitted to the C.A.R. Officers for approval with ratification by the MLS representatives[1] from participating regions.

C.A.R. MLS Committee Chair: The C.A.R. MLS Committee Chair would serve as another portal of regional input to the statewide effort.

Association Executive: The Association Executive would be selected by the Association Executives from those AORs participating in the statewide effort.

Local MLS CEO (chief staff): The local MLS CEO would be selected by the Regional MLSs from those MLSs participating in the statewide effort.

C.A.R. President-Elect: The C.A.R. President-Elect would be a non voting director and would serve as a liaison between the two entities.

Terms of office: 2 year staggered terms with the ability to serve no more than two terms (can be consecutive).

Eligibility and Restrictions:

- No more than one voting director from any one firm with common ownership
- No more than two voting directors from any one franchise
- No director can serve on a local association board of directors or regional MLS board of directors
- No MLS Director or AE may be from the same association as the REALTOR® directors
- All voting directors, with the exception of outside directors, must be REALTORS® in good standing with an unrestricted license during their entire term of office.
- All directors, with the exception of outside directors, must be from firms participating in the MLS (with a delayed implementation time for the start up)

[1] References to MLS Representatives from a participating region would be proportional and the AORs could use the same individuals as the C.A.R. Directors from that AOR at the local AOR's option

Chairman of the Board

Selected by the board members from the board members after their election.

E. Rules and Regulations

Point number five approved by the Board of Directors was to have uniform rules that are enforced consistently. Outside antitrust counsel has advised that uniform rules can be accommodated under certain structures for an aggregation as well as for a statewide MLS. The variation of rules from jurisdiction to jurisdiction creates confusion and inefficiencies due not only to the variation in rules but the methods and rigor of enforcement. The variation of rules from jurisdiction to jurisdiction creates confusion and inefficiencies due not only to the variation in rules but the methods and rigor of enforcement. As it relates to IDX feeds and the various local options, this lack of uniformity results in costs and segregation of data on a broker website to accommodate these variations without any perceived corresponding value in customer service, broker or agent benefit. Therefore, in keeping with the six principles, the system of rules adoption and enforcement for both the centralized MLS and the aggregation is the same for both proposals. In both cases, local AORs would have to cede control over their MLS rules; uniformity is not possible otherwise.

Standardized MLS Rules

The rules would be ultimately adopted by the board of directors of the statewide entity. However, it is anticipated that the C.A.R. MLS Committee could provide nonbinding recommendations and feedback on the rules and their enforcement from the various parts of the state. Unlike the current system of California Model MLS Rules, these rules would not be optional for those participating in the statewide aggregation or statewide MLS systems.

Two significant efforts have been underway to come up with a common set of rules in the NCREX area as well as in the Southern California Area. These are patterned after the California Model MLS Rules that have wide adoption over the state. The rules proposed for both the aggregation and the statewide MLS reconcile these two NCREX and Southern California efforts to make one set of rules that would have the widest amount of acceptance utilizing the decisions made locally thus far.

The key areas identified between these two are typical of those that vary across the state. They include:

1. Time for submitting listings. The proposed rules adopt a 72 hour rule but no longer exclude holidays and weekends.

2. Various types of properties listed: Some rules adopt a more comprehensive approach with more fields and detailed descriptions. The more detailed approach is proposed.

3. Whether to allow MLSs to allow the seller to authorize withholding the sales price. The current Model MLS Rules do not allow for seller opt-out of reporting sales and this would have to be determined.

4. Definitions of “Days on Market” and “Cumulative Days on Market” to provide an accurate picture of a property’s time for sale.

5. More detailed sections regarding photographs and authority and rights to them.

6. Auction rules.

7. More detail with respect to lockbox usage.

8. IDX Rules.

9. Citable offenses and amounts of fines.

Currently, the California Model MLS Rules are adopted by the C.A.R. MLS Committee and approved by the C.A.R. Board of Directors. A statewide MLS or aggregation service would have its board of directors approve its MLS rules and make any amendments. Unlike the California Model MLS Rules that are optional for each AOR or MLS to adopt, when the statewide MLS Board of Directors adopted the MLS rules, they would bind every MLS participant and subscriber in the statewide MLS and therefore achieve the efficiencies and standardization described in the 6th MLS point.

Consistent Enforcement of Rules

Consistent MLS rules do not always guarantee consistent *enforcement* of those rules. For example, even though all local AORs use the same NAR Code of Ethics, members from different local associations still experience inconsistencies in the application of the Code of Ethics. This can be due to: 1) local interpretations 2) rigor of enforcement at a particular AOR and 3) individual panel members applying the same rule differently to the same factual pattern. These same challenges will occur in enforcing uniform MLS rules. Nevertheless, there are some steps that can be taken to minimize widely variant interpretations.

1. Regional MLS Appellate panels will be used. These panels would have the ability to substantively review local decisions for errors of application of the rules or misinterpretation of the rules; their powers would not be limited to procedural review. These panels will meet on a regular basis at the C.A.R. Meetings to keep up to date on rules and share philosophies of enforcement. These meetings would be for collaboration to allow for more consistent enforcement of rules.

2. The Regional MLS Appellate panels will be selected for not only their willingness to serve but for their real estate business reputation in the community, knowledge of real estate, current practical experience, and integrity. They also must have a temperament that allows for fair and even evaluation of facts with the ability to apply the rules in an objective and even handed manner.

3. The Regional MLS Appellate panel would also have the ability to publish their case holdings for guidance without reference to the names of the parties. This would give all MLS participants more guidance on application of rules to certain circumstances and should promote more consistent application of the rules.

4. Local AORs would continue to be the first line enforcers of MLS rules. They would assemble panels of qualified hearing panelists. These could be the same or different from the Professional Standards Hearing Panelists. However, there would be minimum training requirements for the MLS Hearing Panelists and a qualifying test. Local AORs would be required to share panelists with any other local AOR serving as a portal to the statewide MLS.

Summary

SECTION VI. SUMMARY

Both the Statewide aggregation and the Statewide MLS can offer tremendous benefit and business productivity to every REALTOR® in California. As these business plans reveal, both services are technologically feasible, fiscally beneficial to the C.A.R. membership and make the practice of real estate a much simpler process.

The CSDAS will provide C.A.R. members the ability to ignore artificial boundaries and practice real estate in the market areas they and their clients require. At the same time, the service allows brokers and agents to specify and obtain the precise data needed for their websites and third party service providers at a fraction of the current overall cost.

The CSMLS will provide C.A.R. members a truly state-of-the-art business service at the lowest possible cost. With a unified information system, coupled with uniform governance, rules and regulations, agents and brokers will no longer be hampered by artificial boundaries or restrictions. Moreover, the CSMLS fulfills all six of the MLS Working Group's Guiding Principles.

A key element in the implementation of the CSDAS or CSMLS is the process of information engineering and establishing a unified information schema. Regardless of whether one or both of the services are pursued, beginning the information engineering process now will reduce implementation time for these services.

We feel strongly that these services will meet the needs of the Associations and their members now and into the future.

OVERVIEW OF DIFFERENCES BETWEEN AGGREGATE AND STATEWIDE MLS SERVICE

	AGGREGATION	CENTRAL MLS
Uniform Rules	**Yes**	**Yes**
Local Initial Rules Enforcement	**Yes**	**Yes**
Regional Appeals for Rules	**Yes**	**Yes**
Central System	**Yes but as a feeder for local systems**	**Yes**
Control Over Local Vendors Selection	**Yes**	**n/a except for optional front ends**
Control Over Central Vendor Selection	**No**	**No**
Cost Savings per year	**$3-$6 Million**	**$52 Million**
Local Control of Revenue (setting of fee for participants)	**Yes**	**Yes**
Local Control Over Fields Added	**Yes with information engineering**	**Yes with information engineering**
Local AOR portal of entry	**Yes**	**Yes**
Central Bd of Directors for Entity	**Yes**	**Yes**
Includes all MLS information	**No (active listings and photos only)**	**Yes**

PROJECT TEAM:

Innovative Solutions, Inc. was selected by C.A.R. to assist the C.A.R. staff in developing the California Statewide Data Aggregation Service Business Plan and the California Statewide Multiple Listing Service Business Plan.

Innovative Solutions, Inc. (ISI) is a consulting firm to the real estate industry, with over 39 years of experience in all aspects of real estate management, strategic planning, Association services and MLS services. Company contact information:

Innovative Solutions, Inc.
2720 Harbor Court
St Augustine, FL 32082
904-347-1300

The team members of the Innovative Solutions, Inc. Project Team are:

James F. Sherry

Jim Sherry has been a key stakeholder at all possible levels within the real estate industry. With more than 39 years experience, Jim has served in various positions to include CEO, Interealty; CEO, Realtron; President of Innovative Solutions, Inc. for over 25 years and has served on numerous Boards of Directors across the business spectrum.

David E. Sullivan

Dave Sullivan has over 35 years experience in the real estate and information technology industries. Among his accomplishments are:

- Multiple national television appearances as technology expert on CNN
- Addressed Joint Committee of US Congress on Technology issues
- Expert in Information Interchange, XML, and Web-Based Systems. Source of the XML-based Real Estate Information Distribution System currently used by the North Texas Real Estate Information System (NTREIS).
- Designed and implemented Web-Based Real Estate Information Retrieval prototype product systems for *Interealty Corp.*
- Designed and developed the REALTOR® Windows Information Network (WIN) distributed database PC product for *Realtron, Inc.*
- Provided the proprietary Real Estate Data Dictionary for use in the *NAR RIN DxM* information interchange project; charter member of RETS working group.
- Provided technology consulting to MLS's and Associations of REALTORS® throughout the US; including *NVAR, WDCAR, NTREIS and MLSNI.*
- Designed and managed the development of the Integrated Document Control System (IDCS) software system used to manage large document bases in installations throughout North America.
- Implemented the Nuclear Regulatory Commission's (NRC) Bibliographic Retrieval System (BRS), a web-based information system that provides public access to more than two million documents.

- Performed Advanced Product Development for RCA Computer Systems Division, including Joint Chiefs of Staff Telecommunications Switching System
- Supplied Proprietary Image Retrieval Product Design and Development for the 3M Company

Gus H. Viera Jr.

Gus Viera has over 18 years experience in all sectors of the real estate industry. Among his accomplishments are:

- Founded and managed *Greater Inland Valleys MLS* in Southern California
- Key participant in the project to exchange listings across five Southern California regional MLSs
- Designed and managed MLS vendor services programs for large geographical regions across the country.
- Developed the business plan for Internet-based MLS systems for *PRC Realty Systems* and *Interealty Corp.*
- Developed the first real estate web portal for *Interealty Corp.*
- Developed and implemented the first franchise-based transaction management system for *RE/MAX of California & Hawaii*
- CEO of RealEstateNet, Inc. a *RE/MAX of California & Hawaii* subsidiary, offering transaction management services to franchise brokerages
- Developed and implemented the National Real Estate Industry Services Business & Marketing Programs for *Nextel Communications*.
- Holds a real estate broker license in the state of Florida