



# New Technologies For The Residential Appraiser

Presenter

R. WAYNE PUGH, MAI, CRE, FRICS

R. Wayne Pugh and Company

Software For Real Estate Professionals, Inc.

Copyright, 2014, R. Wayne Pugh, All rights reserved worldwide



# FORM FILLER or ANALYST

Appraisers are ANALYSTS...

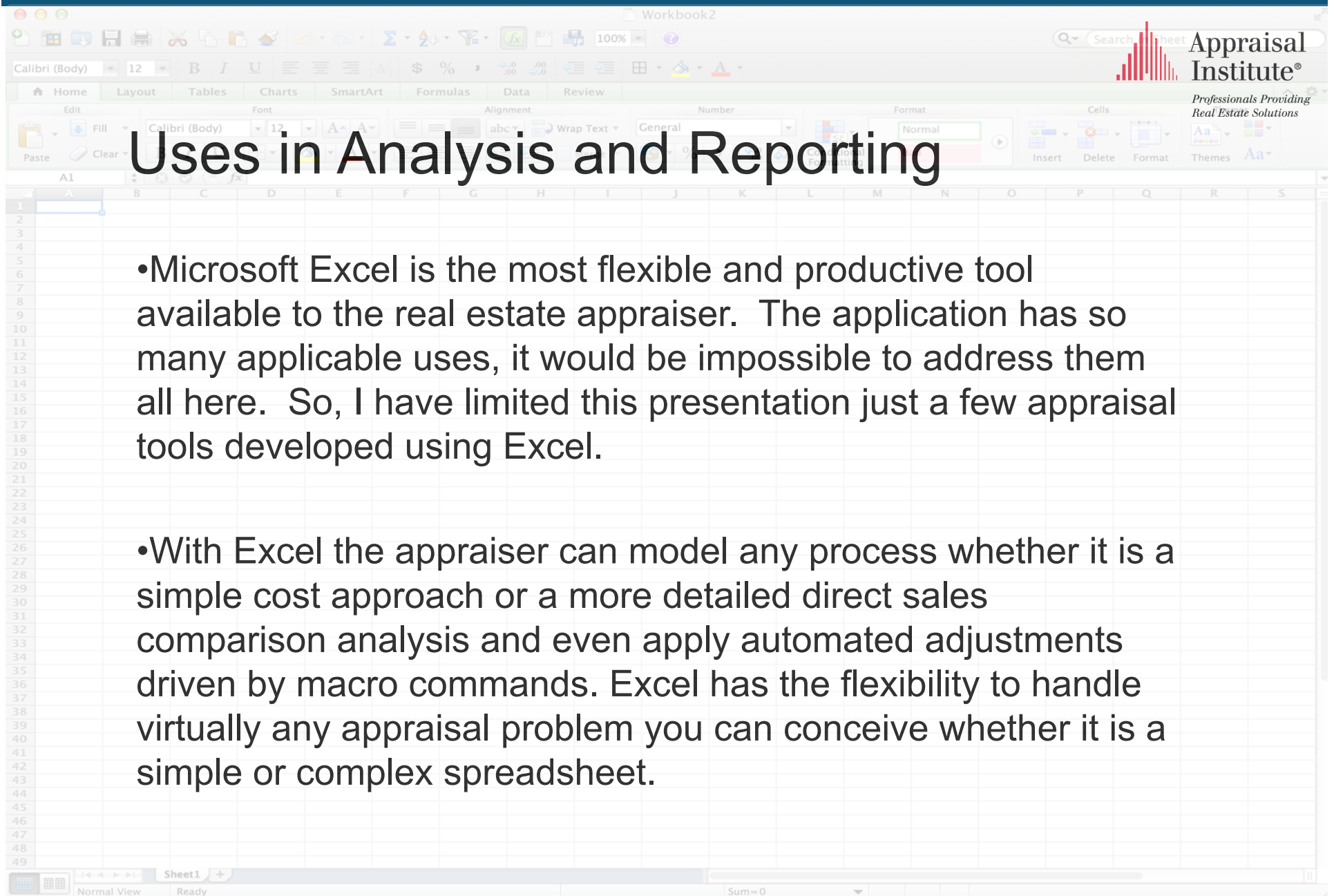
The current 50+ year old valuation model and appraisal community has changed very little.

(Morphed in to 3 comps and a cloud of dust)

Be truthful, how many of you are extracting your adjustments from the market?

What can be done to improve your analysis?

# •Excel

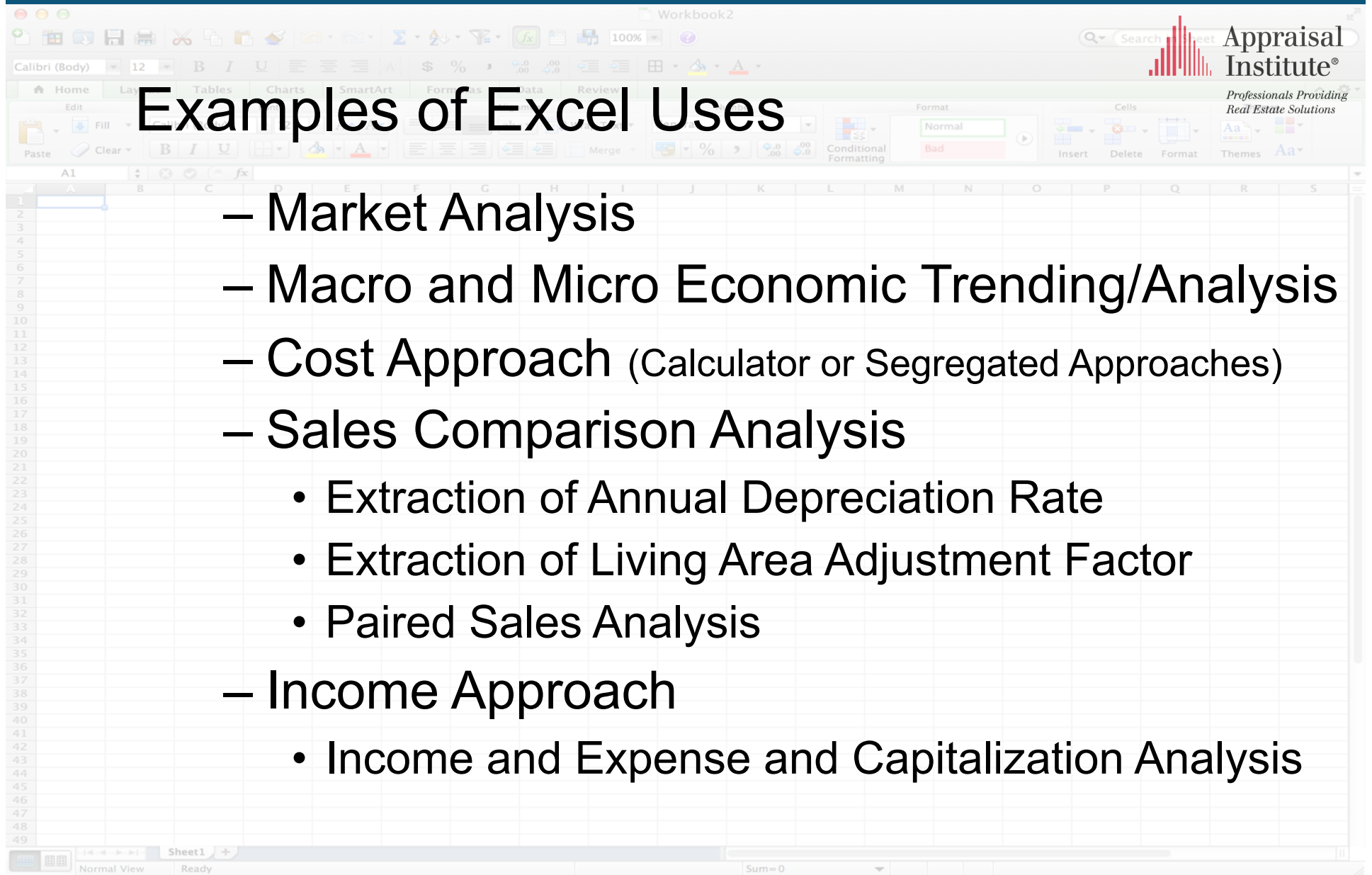
The image shows a screenshot of the Microsoft Excel application window. The title bar reads 'Workbook2'. The ribbon is set to 'Home', and the 'Font' group is active, showing 'Calibri (Body)' font and size '12'. The 'Appraisal Institute' logo is visible in the top right corner of the Excel window. Overlaid on the spreadsheet is a presentation slide with a white background and black text. The slide contains two bullet points. The status bar at the bottom of the Excel window shows 'Normal View', 'Ready', and 'Sum=0'.

Appraisal Institute®  
Professionals Providing Real Estate Solutions

## Uses in Analysis and Reporting

- Microsoft Excel is the most flexible and productive tool available to the real estate appraiser. The application has so many applicable uses, it would be impossible to address them all here. So, I have limited this presentation just a few appraisal tools developed using Excel.
- With Excel the appraiser can model any process whether it is a simple cost approach or a more detailed direct sales comparison analysis and even apply automated adjustments driven by macro commands. Excel has the flexibility to handle virtually any appraisal problem you can conceive whether it is a simple or complex spreadsheet.

# •Excel



The image shows a screenshot of the Microsoft Excel application interface. The title bar at the top indicates the file is named 'Workbook2'. The ribbon is set to the 'Home' tab, showing various options for font, paragraph, and cell formatting. In the top right corner, there is a search bar and the 'Appraisal Institute' logo with the tagline 'Professionals Providing Real Estate Solutions'. Overlaid on the spreadsheet grid is a list of examples of Excel uses, presented as a bulleted list. The spreadsheet grid shows columns A through S and rows 1 through 49. The status bar at the bottom indicates 'Normal View', 'Ready', and 'Sum=0'.

## Examples of Excel Uses

- Market Analysis
- Macro and Micro Economic Trending/Analysis
- Cost Approach (Calculator or Segregated Approaches)
- Sales Comparison Analysis
  - Extraction of Annual Depreciation Rate
  - Extraction of Living Area Adjustment Factor
  - Paired Sales Analysis
- Income Approach
  - Income and Expense and Capitalization Analysis

# •Simple Excel Functions

The screenshot shows the Microsoft Excel interface with a table overlaid on the spreadsheet. The table lists various functions, their syntax, and example formulas. The background shows the Excel ribbon with tabs for Home, Layout, Tables, Font, Charts, SmartArt, Formulas, Data, Review, Number, Format, Cells, and Themes. The status bar at the bottom indicates 'Normal View', 'Ready', and 'Sum=0'.

FUNCTION	SYNTAX	EXAMPLE FORMULA
Simple Math	+ - * / '	=A1+A2
Copy	Ctrl C	Ctrl C
Move	Ctrl X	Ctrl X
Paste	Ctrl V	Ctrl V
Average	AVERAGE(number1,number2,...)	=AVERAGE(A2:A6)
Median	MEDIAN(number1,number2,...)	=MEDIAN(A2:A6)
Mode	MODE(number1,number2,...)	=MODE(A2:A7)
Minimum	MIN(number1,number2,...)	=MIN(A2:A6)
Maximum	MAX(number1,number2,...)	=MAX(A2:A6)
Standard Deviation	STDEV(number1,number2,...)	=STDEV(A2:A11)
Round	ROUND(number,num_digits)	=ROUND(2.149,1)
Sum	SUM(number1,number2,...)	SUM(A2:A4)
Absolute Value	ABS(number)	=ABS(-2)
Count	COUNT(value1,value2,...)	=COUNT(A2:A8)
Datedif	DATEDIF(start_date,end_date,unit)	=DATEDIF(A2,A3,"D")
Trend	TREND(known_y's,known_x's,new_x's,const)	=TREND(G4:G12,F4:F12, E21

[...and so on](#)

Click Help, enter "Functions" then click List all functions (by category)

# •Simple Excel Function

Workbook2

Search Sheet

Appraisal Institute®  
Professionals Providing Real Estate Solutions

Home Layout Tables Charts SmartArt Formulas Data Review

Format Cells

Number Alignment Font Border Fill Protection

Category: Sample  
The living area totals 1,200 square feet.

Type:  
"The living area totals" ###,### "square feet"

General  
0  
0.00  
#,##0  
#,##0.00  
#,##0.00;  
#,##0.00;[Red](#,##0)

Delete

Type the number format code, using one of the existing codes as a starting point.

Cancel OK

Excel File Edit View Insert Format Tools Data

Calibri (Body) 20 B I U \$ %

Home Layout Tables Charts SmartArt Formulas

A5 1200

CUSTOM FORMATTED CELLS

Example:

The living area total 1,200 square feet

Sheet1

Normal View Ready

Sum=0



# •Extraction of Change in Market Conditions

Workbook2

Search

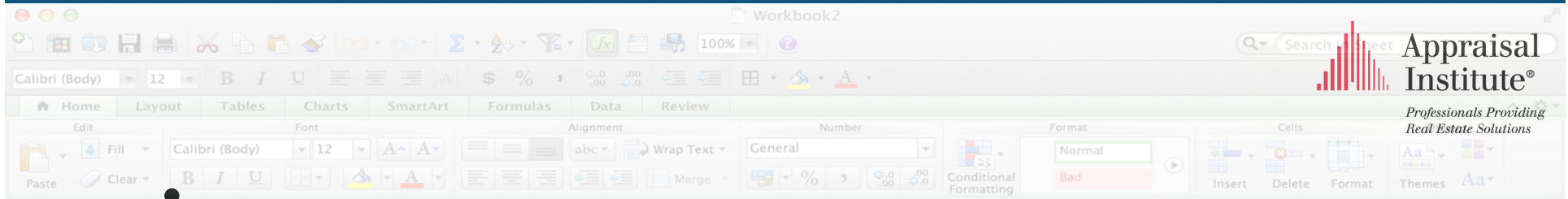
Appraisal Institute®  
Professionals Providing Real Estate Solutions

**Extraction of the Change in Market Conditions**

	Sale 1	Sale 2	Sale 3	Sale 4	Sale 5
<b>Original Sale Date</b>	3/14/10	2/18/09	6/14/11	1/15/11	3/2/11
<b>Resale Date</b>	7/1/12	12/1/12	11/9/12	9/15/12	12/15/12
<b>Difference in Months</b>	28	46	17	20	22
<b>Difference in Years</b>	2.30	3.79	1.41	1.67	1.79
<b>Original Sales Price</b>	\$145,000	\$139,000	\$165,000	\$167,000	\$155,000
<b>Resale Price</b>	\$175,000	\$180,000	\$185,000	\$190,000	\$175,000
<b>Difference in Pricing</b>	\$30,000	\$41,000	\$20,000	\$23,000	\$20,000
<b>Recent Improvements</b>	\$2,000	\$0	\$0	\$0	\$0
<b>Deferred Maintenance</b>	\$1,000	\$0	\$0	\$1,000	\$2,500
<b>Adjusted Difference</b>	\$27,000	\$41,000	\$20,000	\$22,000	\$17,500
<b>Percentage Change (Total)</b>	19%	29%	12%	13%	11%
<b>Percentage Change (Per Year)</b>	8.09%	7.79%	8.61%	7.90%	6.30%
<b>Percentage Change (Per Month)</b>	0.67%	0.64%	0.71%	0.65%	0.52%
<b>Percentage Change</b>		<b>Per Month</b>	<b>Per Year</b>		
Low		0.52%	6.30%		
High		0.71%	8.61%		
Median		0.65%	7.90%		
Mean		0.64%	7.74%		
Standard Deviation		0.07%	0.86%		

Normal View Ready Sum=0

# •Extraction of Location Adjustment



## Extraction of a Location Adjustment

Sale	Sale Price	Days on Market	Bdrms.	Bath F/H	Description	Garage	Year Built	Level	GLA	\$ / GLA
1	\$479,300	125	4	2/1	Subdivision #1	3-car att.	1999	2-Story	3,598	\$133.21
2	\$478,700	135	4	2/1	Subdivision #1	3-car att.	1998	2-Story	3,609	\$132.64
3	\$464,300	164	4	2/1	Subdivision #1	3-car att.	1997	2-Story	3,575	\$129.87
4	\$465,200	129	4	2/1	Subdivision #1	3-car att.	1999	2-Story	3,613	\$128.76
Average									3,599	\$131.12
5	\$425,000	92	4	2/1	Subdivision #2	3-car att.	1999	2-Story	3,579	\$118.75
6	\$410,300	15	4	2/1	Subdivision #2	3-car att.	1998	2-Story	3,617	\$113.44
7	\$396,100	30	4	2/1	Subdivision #2	3-car att.	1997	2-Story	3,583	\$110.55
8	\$382,400	29	4	2/1	Subdivision #2	3-car att.	1999	2-Story	3,621	\$105.61
9	\$369,200	21	4	2/1	Subdivision #2	3-car att.	1999	2-Story	3,587	\$102.93
Average									3,597	\$110.26

**Percentage difference between Subdivision #1 and Subdivision #2**

**18.92%**

# •Extraction of Size Adjustment

## Extracting the Size Adjustment with the TREND Function

Lot No.	Sale Price	Days on Market	Description	Location	Lot Size Sq. Ft.	\$/Sq. Ft.
19	\$103,494	21	Creekside Acres	Line lot	23,773	\$4.35
11	\$108,941	29	Creekside Acres	Line lot	25,291	\$4.31
14	\$114,674	30	Creekside Acres	Line lot	26,905	\$4.26
35	\$120,710	15	Creekside Acres	Line lot	28,622	\$4.22
85	\$127,063	92	Creekside Acres	Line lot	30,449	\$4.17
55	\$133,751	125	Creekside Acres	Line lot	32,393	\$4.13
45	\$140,790	164	Creekside Acres	Line lot	34,460	\$4.09
33	\$148,200	135	Creekside Acres	Line lot	36,660	\$4.04
14	\$156,000	125	Creekside Acres	Line lot	39,000	\$4.00

Using the Trend function to estimate the value of an adjustment for **Size**.

Trend Formula  
(Subject) **=TREND(G2:G10,F2-F10,E17)**

Trend Formula (Comparable Sale) **=TREND(G2:G10,F2-F10,E18)**

### Predicted Values

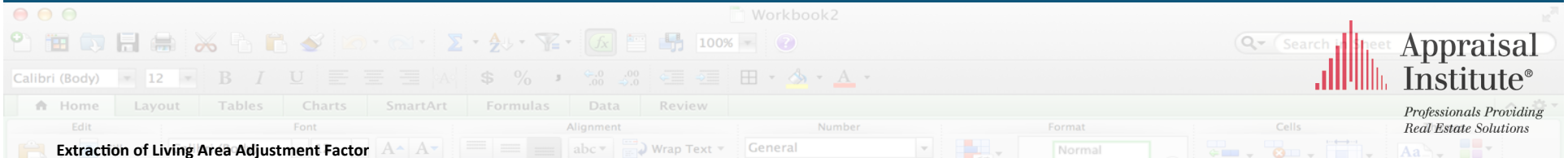
Subject	33,000	<b>\$4.12</b>	\$136,113
Comparable Sale	35,000	<b>\$4.08</b>	142,748
Adjustment for Lot <b>Size</b>			<b>(\$6,635)</b>
Rounded			<b>(\$6,600)</b>

# •Extraction of Annual Depreciation Rate

Extraction of Annual Depreciation Rate and Economic Life					
Comparable Number	Comp 1	Comp 2	Comp 3	Comp 4	Comp 5
Sales Price	\$500,000	\$450,000	\$575,000	\$475,000	\$600,000
Less					
Property Rights Conveyed	\$0	\$0	\$0	\$0	\$0
Financing Terms and Concessions	\$0	\$0	\$0	\$0	\$0
Conditions of Sale	\$0	\$0	\$0	\$0	\$0
Expenditures Immediately After Purchase	\$0	\$0	\$0	\$0	\$0
Adjusted Sales Price	\$500,000	\$450,000	\$575,000	\$475,000	\$600,000
Less					
Land Value	\$100,000	\$90,000	\$120,000	\$90,000	\$140,000
Site improvements	\$20,000	\$15,000	\$25,000	\$20,000	\$20,000
Pool	\$20,000	\$15,000	\$25,000	\$20,000	\$20,000
Car Storage	\$10,000	\$10,000	\$12,000	\$8,000	\$10,000
Porch/Patio/Deck	\$5,000	\$5,000	\$7,500	\$5,000	\$5,000
Other Improvements	\$3,500	\$3,000	\$10,000	\$3,500	\$3,500
Depreciated Value of the Improvements	\$341,500	\$312,000	\$375,500	\$328,500	\$401,500
Living Area	3,500	3,500	3,500	3,500	3,500
Replacement Cost per Square Foot	\$120.00	\$110.00	\$130.00	\$115.00	\$140.00
Replacement Cost - New	\$420,000	\$385,000	\$455,000	\$402,500	\$490,000
Total Depreciation from all causes	\$78,500	\$73,000	\$79,500	\$74,000	\$88,500
Depreciation as Percentage of Replacement Cost	18.69%	18.96%	17.47%	18.39%	18.06%
Property Age	10	9	11	8	9
<b>Indicated Annual Depreciation Rate (ADR)</b>	<b>1.87%</b>	<b>2.11%</b>	<b>1.59%</b>	<b>2.30%</b>	<b>2.01%</b>
<b>Indicated Economic Life (1/ADR)</b>	<b>54</b>	<b>47</b>	<b>63</b>	<b>44</b>	<b>50</b>
Total Depreciation as Percentage of Sales Price	15.70%	16.22%	13.83%	15.58%	14.75%
Annual Depreciation as Percentage of Sales Price	1.57%	1.80%	1.26%	1.95%	1.64%
<b>Summary Stats</b>	<b>ADR</b>	<b>Eco. Life</b>	<b>Dep % SP</b>	<b>ADR % SP</b>	
Minimum	1.59%	44	14%	1.26%	
<b>Median</b>	<b>2.01%</b>	<b>50</b>	<b>16%</b>	<b>1.64%</b>	
<b>Mean</b>	<b>1.97%</b>	<b>51</b>	<b>15%</b>	<b>1.64%</b>	
Maximum	2.30%	63	16%	1.95%	
Standard Deviation	0.27%	7	1%	0.26%	



# Extraction of a Living Area Adjustment Factor



## Extraction of Living Area Adjustment Factor

Item	Comparable 1			Comparable 2			Comparable 3			Comparable 4			Comparable 5		
	Dollars	\$/SF	Percent	Dollars	\$/SF	Percent	Dollars	\$/SF	Percent	Dollars	\$/SF	Percent	Dollars	\$/SF	Percent
Living Area	3,000			2,900			3,200			3,300			4,200		
Sales Price	\$475,000	\$158.33	100.00%	\$440,000	\$151.72	100.00%	\$490,000	\$153.13	100.00%	\$450,000	\$142.86	100.00%	\$600,000	\$142.86	100.00%
Less															
Land Value	\$100,000	\$33.33	21.05%	\$70,000	\$23.33	14.74%	\$120,000	\$40.00	25.26%	\$100,000	\$28.57	20.00%	\$120,000	\$28.57	20.00%
Site Improvements	\$20,000	\$6.67	4.21%	\$15,000	\$5.00	3.16%	\$30,000	\$10.00	6.32%	\$20,000	\$5.71	4.00%	\$20,000	\$4.76	3.33%
Pool	\$10,000	\$3.33	2.11%	\$15,000	\$5.00	3.16%	\$15,000	\$5.00	3.16%	\$20,000	\$5.71	4.00%	\$20,000	\$4.76	3.33%
Car Storage	\$10,000	\$3.33	2.11%	\$10,000	\$3.33	2.11%	\$12,000	\$4.00	2.53%	\$8,000	\$2.86	2.00%	\$10,000	\$2.38	1.67%
Porch/Patio/Deck	\$5,000	\$1.67	1.05%	\$5,000	\$1.67	1.05%	\$7,500	\$2.50	1.58%	\$5,000	\$1.43	1.00%	\$5,000	\$1.19	0.83%
Other Improvements	\$3,500	\$1.17	0.74%	\$3,000	\$1.00	0.63%	\$10,000	\$3.33	2.11%	\$3,500	\$1.00	0.70%	\$3,500	\$0.83	0.58%
<b>Living Area Value</b>	<b>\$326,500</b>	<b>\$108.83</b>	<b>68.74%</b>	<b>\$322,000</b>	<b>\$111.03</b>	<b>70.13%</b>	<b>\$295,500</b>	<b>\$92.34</b>	<b>58.32%</b>	<b>\$293,500</b>	<b>\$88.94</b>	<b>62.26%</b>	<b>\$421,500</b>	<b>\$100.36</b>	<b>70.25%</b>

Summary Stats	\$/SF	Percent
Low	\$88.94	58.32%
Median	<b>\$100.36</b>	68.74%
Mean	<b>\$100.30</b>	65.94%
High	\$111.03	70.25%
Standard Deviation	\$9.75	5.37%

Differential Analysis	Differential		Differential	
	Living Area Value	Differential Living Area	Living Area Value	Differential Living Area / SF
Comps 1 & 2	\$4,500	100	\$45.00	
Comps 3 & 4	\$2,000	100	\$20.00	
Comps 1 & 3	\$31,000	200	\$155.00	
Comps 2 & 3	\$26,500	300	\$88.33	
Comps 1 & 4	\$33,000	300	\$110.00	
Comps 2 & 4	\$28,500	400	\$71.25	
Comps 4 & 5	\$128,000	900	\$142.22	
Comps 3 & 5	\$126,000	1,000	\$126.00	
Comps 1 & 5	\$95,000	1,200	\$79.17	
Comps 2 & 5	\$95,000	1,200	\$79.17	
Low	\$2,000	\$100	\$20.00	
Median	\$32,000	\$350	<b>\$83.75</b>	
Mean	\$56,950	\$570	<b>\$91.61</b>	
High	\$128,000	\$1,200	\$155.00	
Standard Deviation	\$48,837	\$452	\$42.34	

©Copyright 2012, R. Wayne Pugh and Company. All rights reserved worldwide.



# •Multi-Family Sales Comparison Analysis



Workbook2

Search

Calibri (Body) 11

**SALES COMPARISON ANALYSIS**

Subject		Comparable 1		Comparable 2		Comparable 3					
Address		666 Moss Side Lane		5582 Picardy Rd		898 Woodchase Rd		457 Perkins Rd			
Sale Price		\$200,000		\$175,000		\$200,000					
Sale Price/Sq. Ft. GBA		\$90.91		\$94.23		\$94.52					
Gross Monthly Rent		\$1,850		\$2,400		\$1,750					
Gross Rent Multiplier		108.11		102.08		113.43					
Price per Unit		\$66,667		\$43,750		\$66,667					
Price per Room		\$16,667		\$13,462		\$16,667					
Price Bedroom		\$33,333		\$35,000		\$33,333					
Rent Control											
Data Source(s)		MLS 3383		MLS 3563		MLS 3396					
Verification Source(s)		Confirmed with Broker		Confirmed with Broker		Confirmed with Broker					
<b>Adjustments</b>		<b>Unit Adj. Description</b>		<b>Description Adj.</b>		<b>Description Adj.</b>		<b>Description Adj.</b>			
Sales or Financing				New Mortgage		New Mortgage					
Concessions				No Concessions		No Concessions					
Date of Sale/Time		2.5%		2 months ago		8003 months ago		1,10022 months ago		9,200	
Location		ABC Acrers		ABC Acrers		ABC Acrers		ABC Acrers			
Leasehold/Fee Simple		Fee Simple		Fee Simple		Fee Simple		Fee Simple			
Site (sq. ft.)		\$0.30 45,000		32,000 3,900		41,000 1,200		24,000 6,300			
View		Residential		Residential		Residential		Residential			
Desing (style)		1-story/Average		1-story/Average		2-story/Average		1-story/Average			
Quality of Construction		Brick/Frame/Avg		Brick/Frame/Avg		Brick/Frame/Avg		Brick/Frame/Avg			
Actual Age		\$3,000 10		10 0		0 -30,000		18 24,000			
Conditon		Average		Average		Average		Average			
Gross Building Area		\$38.00 2900		2200 26,600		2600 11,400		2100 30,400			
Unit Breakdown		Total Bdrms. Baths		Total Bdrms. Baths		Total Bdrms. Baths		Total Bdrms. Baths			
Unit #1		4 2 1		4 2 1		3 2 2		4 2 1			
Unit #2		4 2 1		4 2 1		3 1 1		4 2 1			
Unit #3		4 2 1		4 2 1		3 1 1		4 2 1			
Unit #4		4 2 1		3 1 1		3 1 1					
Basement		\$15.00 1,450		0 21,750		1,500 -750		2,000 -8,250			
Baesment Finished		\$10.00 0		0 0		0 0		0 0			
Functional Utility		Average		Average		Average		Average			
Heating and Cooling		4 GFA/Cent AC		3 GFA/Cent AC		4 GFA/Cent AC		3 GFA/Cent AC			
Energy Efficient Items		Standard		Similar		Similar		Similar			
Parking On/Off Site		4-car det		3-car det		None 16,000		3-car det			
Porch/Patio/Deck		Scr. Porches (4)		Scr. Porches (3) 2,000		Porches (4) 2,000		Scr. Porches (2) 4,000			
Net Adjustment				55,050		950		65,650			
Adjusted Sale Price of Comparable				144,950		174,050		134,350			
Net Adj. %				38%		1%		49%			
Adj. Price per Unit (adj. price/#of Comp. units)				\$48,317		\$43,513		\$44,783			
Adj. Price per Room (adj. price/#of Comp. Rooms)				\$12,079		\$13,388		\$11,196			
Adj. Price per Bedroom (adj. price/#of Comp. Bedrooms)				\$24,158		\$34,810		\$22,392			

Normal View Ready Sum=0

# Commercial Adjustments

Percentage of Office Area

Age

Other Areas (Porch or Balcony)

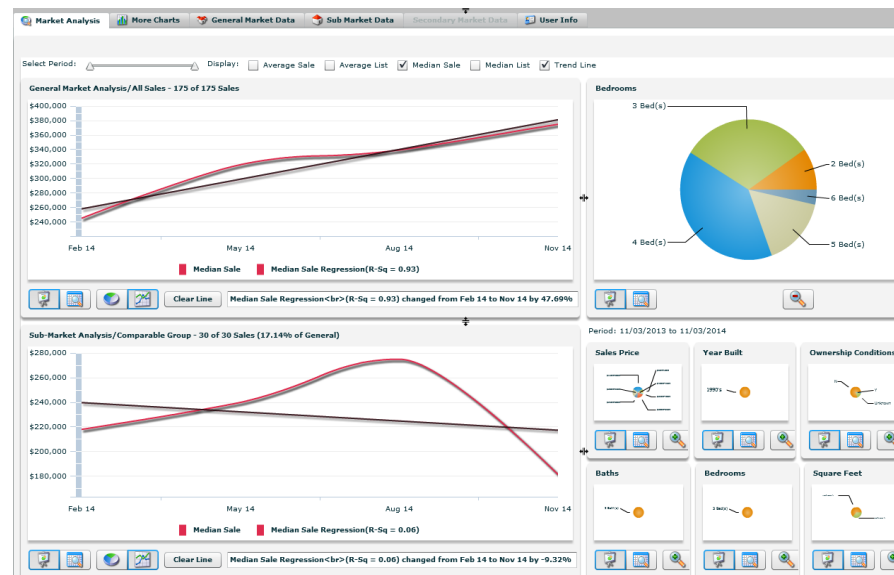
Qualitative Analysis

<b>ADJUSTMENT FOR THE PERCENTAGE OF OFFICE AREA</b>				
	<b>Subject</b>	<b>Comp 1</b>	<b>Comp 2</b>	<b>Comp 3</b>
Total building area	39,400	70,000	42,378	17,000
Percentage of office area	32%	14%	20%	35%
Office area	12,500	9,800	8,476	5,950
Imputed office area to equate to comp		22,050	13,349	5,355
Difference in office area		12,250	4,873	-595
Unit value for the office area (\$/SF)		\$60.00	\$60.00	\$60.00
Indicated Adjustment		\$735,000	\$292,408	-\$35,700
Rounded		\$735,000	\$292,400	-\$35,700
Adjusted Sales Price		\$5,000,000	\$2,300,000	\$975,000
Percentage adjustment		14.70%	12.71%	-3.66%

# Analytics for Big Data

## S.M.A.R.T.

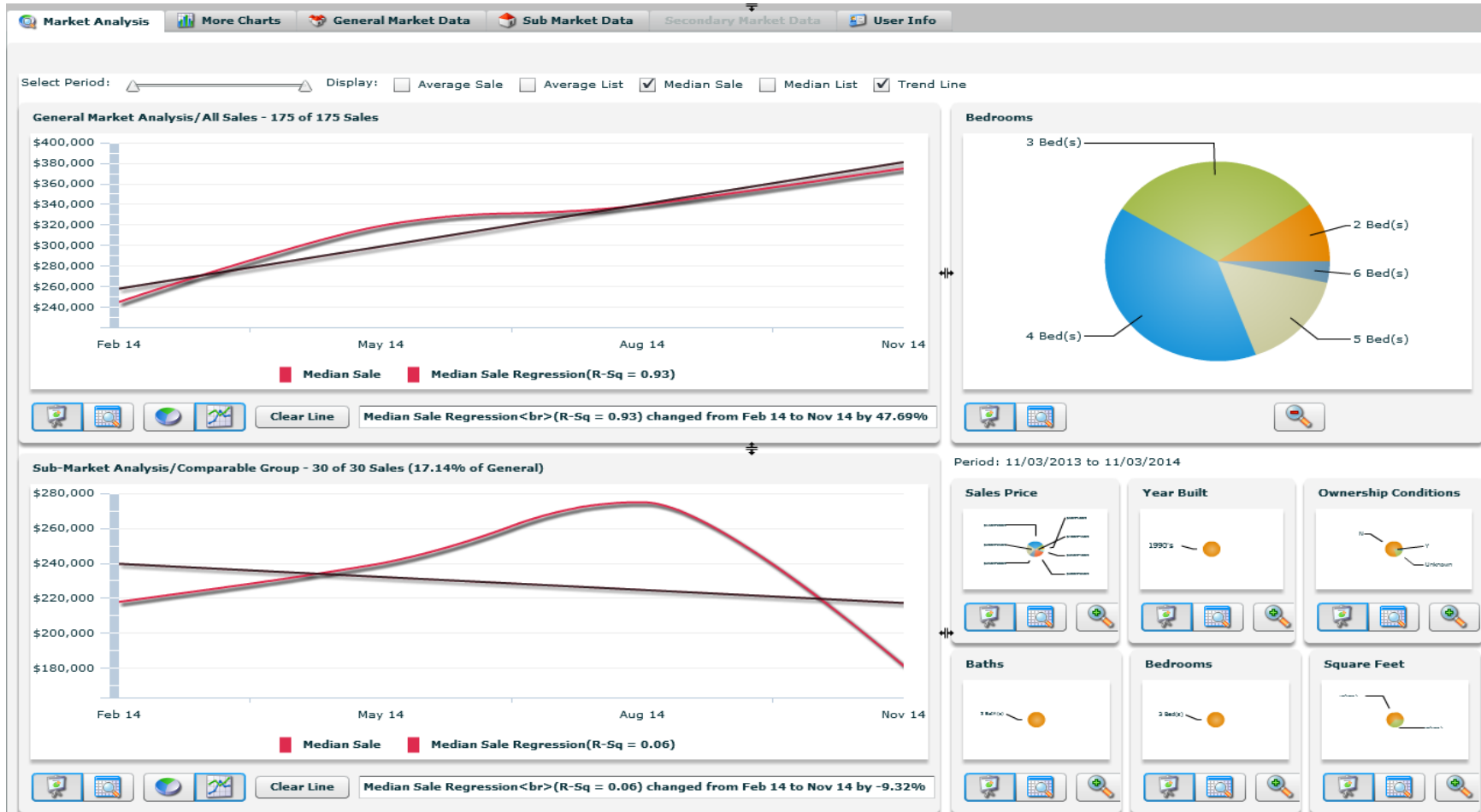
Never before have appraisers had the ability to analyze sales in bulk with such flexible function and meaningful results. As an added benefit, S.M.A.R.T will complete the 1004MC form with a minimum of input from the appraiser. The user just downloads the filtered MLS data and drags the file to the S.M.A.R.T icon, and S.M.A.R.T shows you the following dashboard view of your selected data.



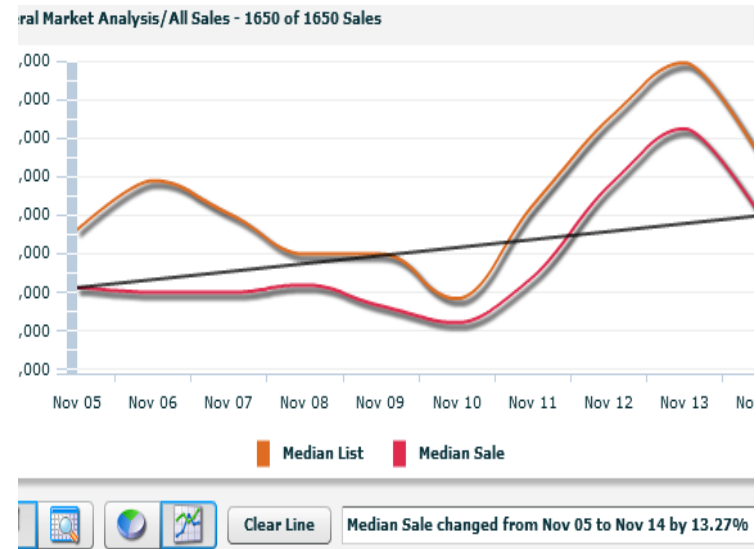
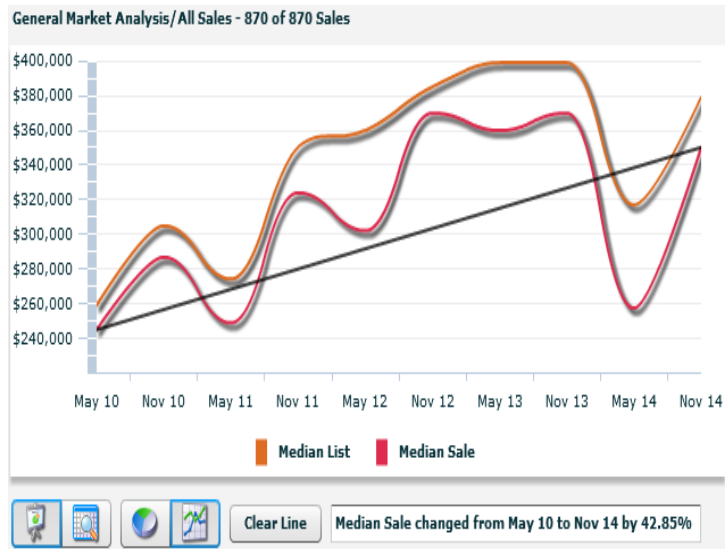
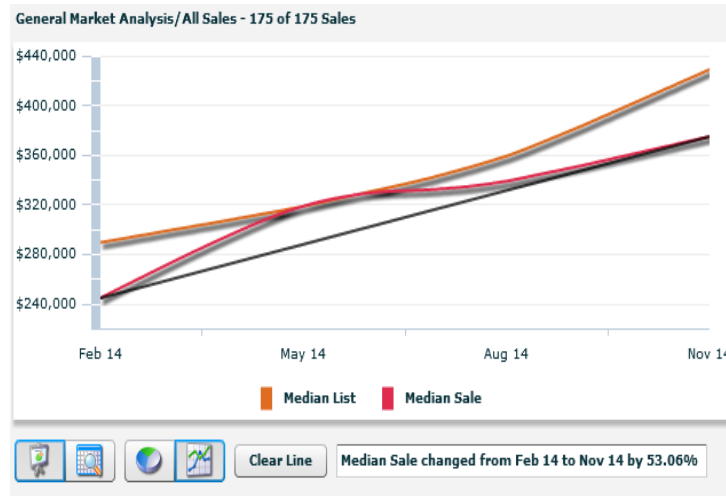
Website: <http://www.smarterappraising.com/>

# The SMART Dashboard

What appears to be obvious, may actually not



# Data Visualization (1, 5, & 10 years)

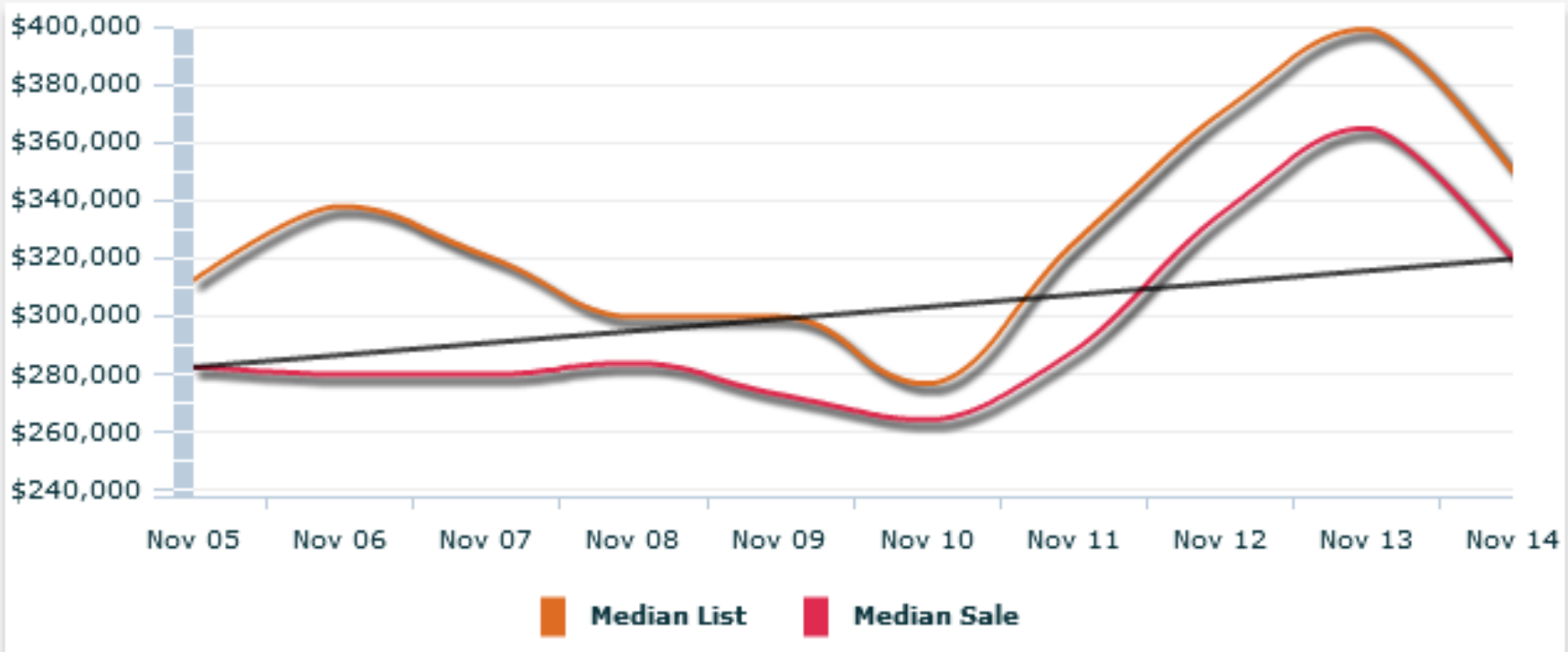




# Data Visualization (10 years)

1,650 Sales, Median Price increasing 25.01%

General Market Analysis/All Sales - 1650 of 1650 Sales



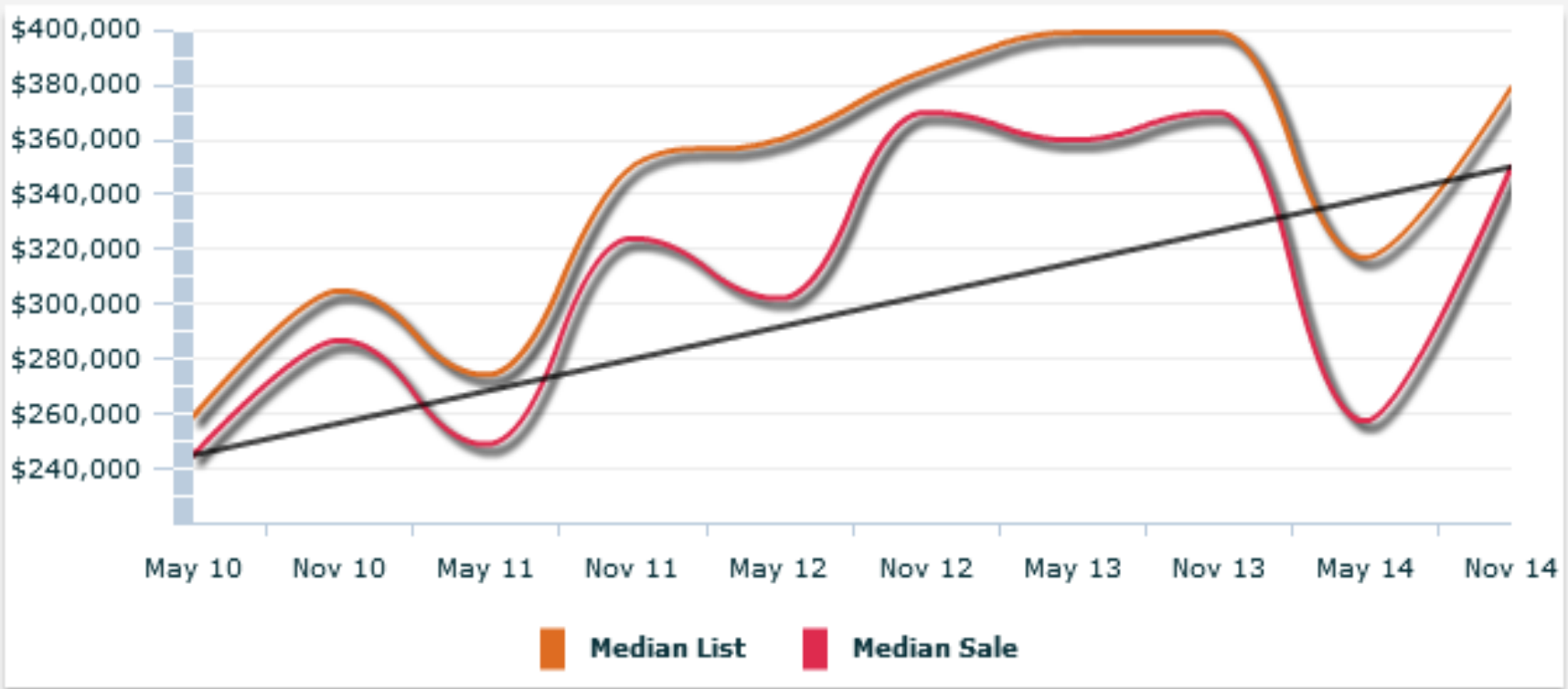
Clear Line

Median Sale changed from Nov 05 to Nov 14 by 13.27%

# Data Visualization (5 years)

870 Sales, Median Price increasing 42.85%

General Market Analysis/All Sales - 870 of 870 Sales

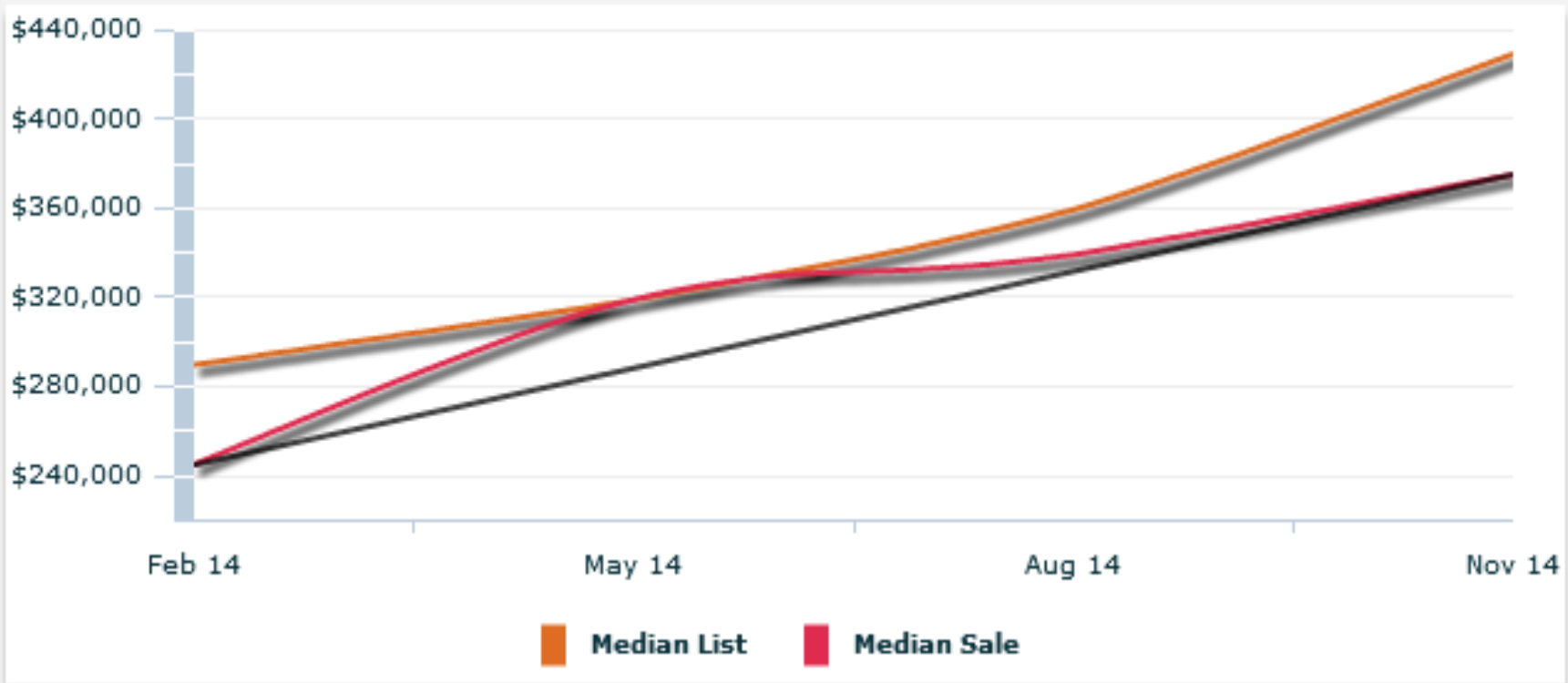


Clear Line    Median Sale changed from May 10 to Nov 14 by 42.85%

# Data Visualization (1 year)

175 Sales, Median Price increasing 53.06%

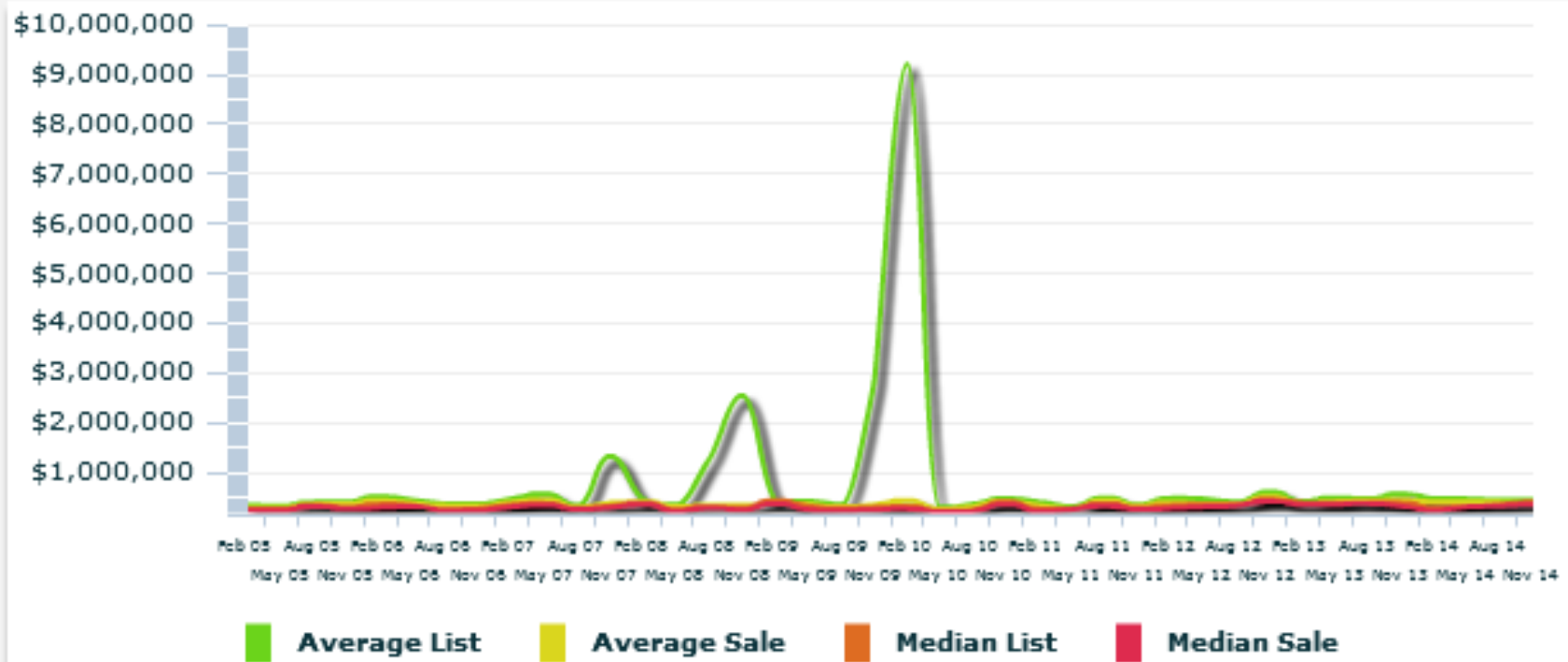
General Market Analysis/All Sales - 175 of 175 Sales



Clear Line    Median Sale changed from Feb 14 to Nov 14 by 53.06%

# Data Visualization, Viewing Outliers

General Market Analysis/All Sales - 1657 of 1657 Sales



# Data Visualization, Removing Outliers

Market Analysis | More Charts | General Market Data | Sub Market Data | Secondary Market Data | User Info

Sale Data

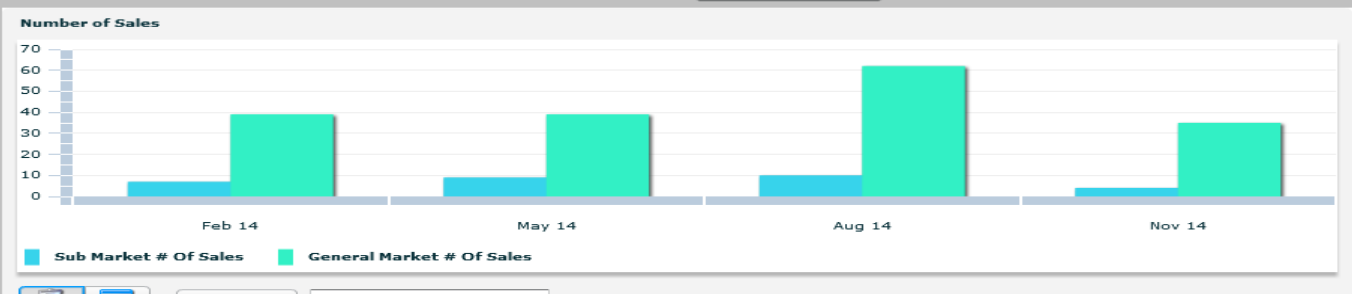
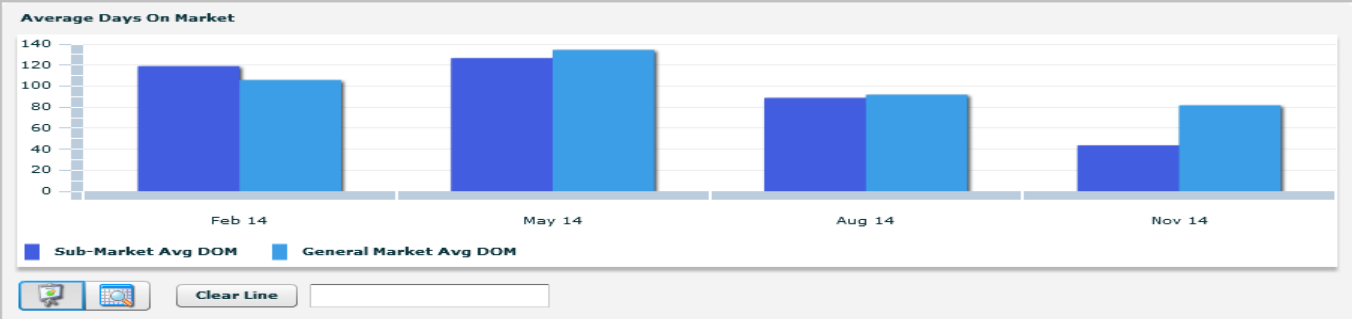
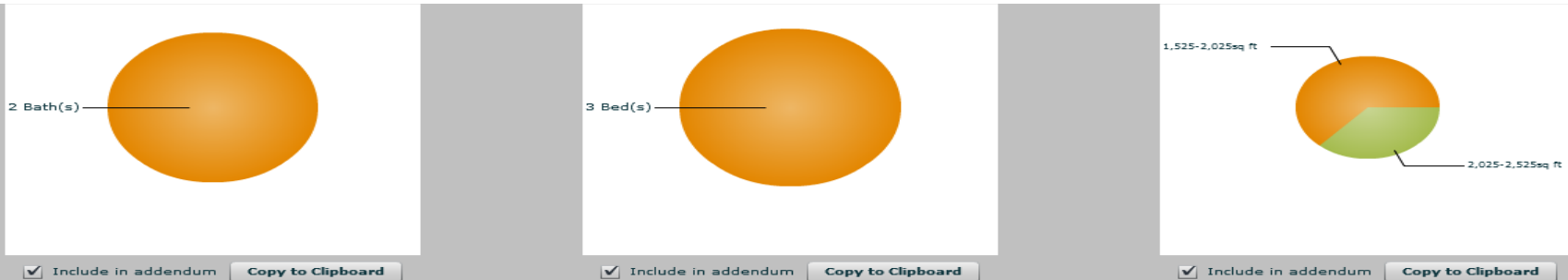
All Data - Nov 04 - Nov 14 | Export to file | Remove selected sales

Sale Date	Sale Price	Days On Market	List Price	Year Built	Closing Costs	Ownership	Bedrooms	Baths	Square Fee
12/29/2009	2225000	219	289500000	1995	0	Unknown	7	7	2757
9/30/2009	947524	0	94752475	1995	0	Unknown	3	2	2756
9/4/2008	850000	8	92900000	1995	0	Unknown	7	4	2755
5/30/2008	365000	217	44835000	1995	0	Unknown	4	2	2755
8/3/2007	310000	28	36900000	1995	0	Unknown	4	3	2755
5/1/2007	2492336	0	4500000	1995	0	Unknown	8	5	2754
1/13/2014	2675000	236	3500000	1995	0	Unknown	5	5	2753



# Data Visualization

## Other Charts and Graphs



# Data Visualization

## Easily complete the 1004MC form

	11/03/2013	05/02/2014	05/03/2014	08/02/2014	08/03/2014	11/03/2014	
Total # of Comparable Sales (Settled)	16		10		4		Select ▼
Absorption Rate (Total Sales/Months)	2.6		3.3		1.3		Select ▼
Total # of Comparable Active Listings	20		15		15		Select ▼
Months of Housing Supply (Total Listings/Ab. Rate)	7.5		4.5		11.2		Select ▼
<b>Median Sale &amp; List Price, DOM, List/Sale Ratio</b>	<b>Prior 7-12 Months</b>		<b>Prior 4-6 Months</b>		<b>Current-3 Months</b>		<b>Overall Trend</b>
Median Comparable Sale Price	229,000		275,000		181,500		Select ▼
Median Comparable Sale Days On Market	79		39		34		Select ▼
Median Comparable List Price	273,050		273,000		310,000		Select ▼
Median Comparable Listings Days On Market	162		85		82		Select ▼
Median List-to-Sale Price Ratio	93%		96%		96%		Select ▼
Percentage of Sales with Contributions	0%		0%		0%		
Percentage of Contribution to Sale	0.0%		0.0%		0.0%		
<b>Seller - (developer, builder, etc.) paid financial assistance prevelant?</b>	Select ▼					Select ▼	
<b>Explain in detail the seller concessions trends for the past 12 months (e.g., seller contributions increased from 3% to 5%, increasing use of buydowns, closing costs, condo fees, options, etc.).</b>							
Traditionally sellers have paid up to [XX%] in closing costs. Recently, the amount of seller concessions has [remained stable.   increased.   declined.] [*Increase* The increased seller contributions is driven by competition for buyers in this buyers market cycle.] [* New* In addition, there is an over supply of new construction homes that							
<b>Are foreclosure sales (REO sales) a factor in the market?</b> Select ▼ <b>If yes, explain (including the trends in listings and sales of foreclosed properties).</b>							
[*YES* Over the past year, [XX%] of all sales were foreclosures. In some cases, a foreclosed resale or actively listed REO has few differences in physical condition when compared to a non-REO resale and therefore compete for the same buyers. This has an impact on the values of non REO housing due to the principal of substitution.]							
<b>Cite data sources for above information.</b>							
The data provided in this analysis was generated using a data analysis tool known as S.M.A.R.T. This tool enables the appraiser to extract records from [MLS] and analyze both the General/Macro market and Micro/Sub Market of homes from the defined neighborhood.							

# Data Visualization

## SMART Market Trend Report

File About

File:  Borrower:

Subject:  Period:

The following analysis includes 284 properties extracted from MLS during the period beginning August 2013 and ending November 2014. The properties analyzed included all Active, Expired, Withdrawn, Canceled and Sold listings extracted from neighborhood boundaries as defined by the user. The 'General' or 'Macro Market' (all residential property) and the 'Sub-Market' or 'Micro Market' (homes competing for similar buyers) have been

**General Market:**

Since November 2013 the median sale price of the general market has changed by 11.94%. Over the past 6 month cycle, the median sale price has changed by 17.55% while sales volume has changed by -10.25%. The current inventory level is 10.7 month(s) based on the number of current active listings vs. the number of closed sales over the past 3 months.

**Sub-Market:**

Since November 2013 the median sale price of competing homes has changed by -19.69%. Over the past 6 month cycle, the median sale price has changed by -24.37% while sales volume has changed by -55.55%. The current inventory level is 11.2 month(s) based on the number of current active listings vs. the number of closed sales over the past 3 months.

Market Segment	Age (Year Built)	GLA (if available in MLS)	# of Bedrooms	Price Range
General Market (All) 214 properties	1995 - 1995	1496 - 2753	2 - 7	\$20,000 - \$2,675,000
Sub Market (Competing) 38 properties	1995 - 1995	1525 - 2730	3 - 3	\$91,000 - \$425,000

NOTE: The value in the chart below, represent the changes over time since the beginning period. For example, the median price change represented in the last period is the change since the initial date

Initial Values			Nov 13		Feb 14		May 14		Aug 14		Nov 14	
Gen	Sub	Average \$	Gen	Sub	Gen	Sub	Gen	Sub	Gen	Sub	Gen	Sub
\$471,190	\$245,543	Median \$	-13.84%	3.26%	-11.62%	-7.89%	-13.79%	6.23%	-14.23%	-25.67%		
\$335,000	\$226,000	Median \$	-26.86%	-3.53%	-4.77%	6.19%	1.26%	21.68%	11.94%	-19.69%		
39	8	Volume %	0.00%	-12.50%	0.00%	12.50%	58.97%	25.00%	-10.25%	-50.00%		
13.0	2.6	Absorption	13.0	2.3	13.0	3.0	20.6	3.3	11.6	1.3		
5.3 month(s)	4.5 month(s)	Inventory	5.3 month(s)	5.1 month(s)	6.0 month(s)	4.3 month(s)	4.6 month(s)	3.3 month(s)	10.7 month(s)	11.2 month(s)		

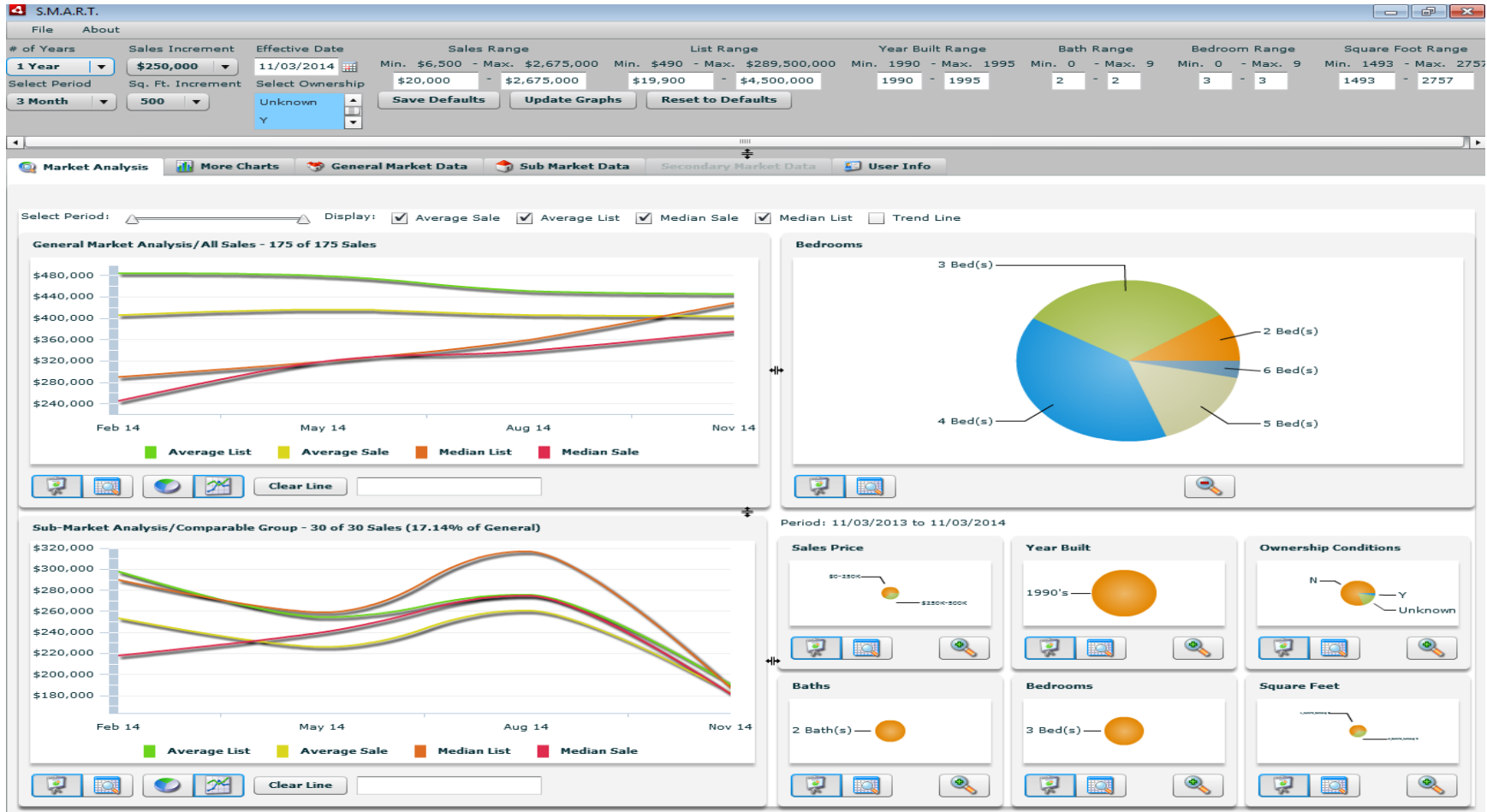
General Market (All) Sub Market (Competing properties) Volume (General and Sub Market)

**General Market (All)**

Nov 13 Feb 14 May 14 Aug 14 Nov 14

Print to PDF Back to Analysis

# Data Visualization SMART Dashboard



# How can I purchase SMART?

[www.smarterappraising.com](http://www.smarterappraising.com)



HOME

MLS SYSTEMS

TUTORIALS

DOWNLOADS

SUPPORT

SALES

LOGIN

HOME

MLS SYSTEMS

TUTORIALS

DOWNLOADS

SUPPORT

SALES

LOGIN



## Are you ready to get S.M.A.R.T.?

Prior to creating an account, please perform the following:

- 1) Make sure your MLS system is compatible. [Click here.](#)
- 2) Make sure you are able to watch the [training videos.](#)
- 3) If you already have a PayPal account, have your login info handy.

\*Note: If you want to be billed monthly, PayPal is the only option. Annual subscriptions can be paid by check.

## "Give me the details."



\*30 Day Free Trial

\*Cost - \$25.00 for the 1st PC license.  
\$5.00 for the 2nd PC per month.

\*Per month basis - No Contracts

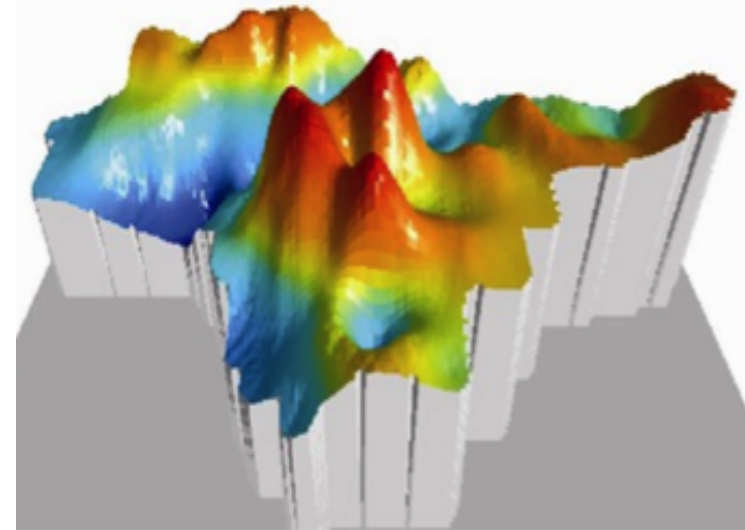
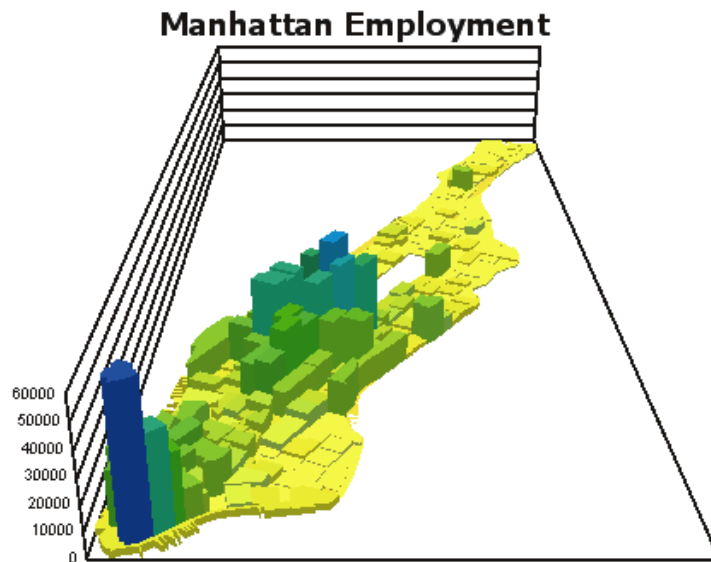
\*Save 10% when paid annually

\*LSI Appraisers get 20% off!

# Data Visualization

## Maptitude GIS

The Appraisal Institute's GIS users group reviewed the majority of GIS applications considering pricing, features and ease of use, and *Caliper Corporation's Maptitude* was their choice for the group. Members of the AI can purchase the \$695 product for \$520 (a 25% discount).



<http://www.caliper.com/maptovu.htm>

# Google Drive

## Cloud Storage and Google Docs

### COOLTOOLS

Wayne's world of software & gadgets  
by WAYNE PUGH, MAI

#### Google Drive puts users on the road to mobile file sharing and editing

**G**oogle Drive is a cloud-based application that provides a suite of tools that is compatible with Microsoft Word, Excel and PowerPoint and allows appraisers to create and edit documents using their computer or mobile device.

The application is free with the 15GB plan. If additional storage is needed, users can purchase 100GB for \$4.99 per month or 200GB for \$9.99 per month.

**Getting Started**  
Download Google Drive at [www.drive.google.com](http://www.drive.google.com). The App for iPhone, iPad or Android devices can be found in the Apple and Google Play app stores. When the installation is completed, Google Drive simply will appear as a drive folder on your computer or mobile device.

**Top Features**

- **Universal file access**  
Google Drive lets you store and access files from the Web, your computer or mobile device. Change a file on any one of your devices and it changes the file everywhere.
- **Google Drive apps**  
Google Drive is compatible with Microsoft Office applications and can be used to create and edit Word and Excel files and view PowerPoint files. Your files even are available offline if you install the optional Drive Chrome Web app. An important reminder: if files are deleted from a local drive, they

**Project management**  
Another nifty feature allows users to enhance project management tasks by uploading calendars, documents, to-do lists, spreadsheets, presentations and the like.

■ **Safe and fast cloud storage**  
Google Drive is an inexpensive and secure way to store your files in the cloud. When integrated with your

file explorer, items can be copied to your cloud storage in just a few seconds. For tips on how to make Google Drive even more secure, check out the recommendations at [www.google.com/goofstknw](http://www.google.com/goofstknw).

**A Few Concerns**

- **Speed**  
A fast Internet connection is necessary for responsive access. Also, there can be a noticeable degradation in speed as multiple users simultaneously access the same file.
- **Intuitiveness**  
The learning curve is a slight drawback; formulas and keystrokes are not identical to those used with Microsoft Word and Excel.
- **Font**  
Another issue I had with Google Drive was the inability to change the format, font attributes for a single word within a spreadsheet cell.

**Summary**  
Google Drive is one of the most flexible applications for editing documents on the fly. Change an appraisal document from your computer or from your mobile device – it's one data center for all of your devices. I give it 4 out of 5 stars. **A**

I want to hear from you, so send me product recommendations. I love being able to share exciting new products submitted by real Cool Tool experts. Email your suggestions to [wayne@lasappraisal.com](mailto:wayne@lasappraisal.com).



Google Drive folder and files are highlighted in yellow.

also will be deleted from Google Drive – as is the case with any file-syncing service.

- **Easy file conversion**  
The process of importing and exporting files in Word and Excel formats is relatively simple and the file conversions from Microsoft to Google or vice versa are nearly perfect.
- **OCR technology**  
One of the coolest features of Google Drive is its ability to “read” photos with its built-in OCR technology. How it works: Say you need a copy of the property owner’s document showing a complex legal description – you can simply snap a photo of it and save it as a Google document. Google Drive will save a corresponding text file along with the photo.
- **Collaborate with others on your team**  
The way that Google Drive differs from Microsoft Office 365 is in its ability to allow multiple users to collaborate on an appraisal report file (and invited users can quickly be deactivated, if needed). Users of Google Docs, Sheets, Slides, Forms and Drawings can simultaneously access a file and make edits to that file.
- **Easily retrieve prior file versions**  
Google Drive stores all versions of your files, so should you need to access a prior version, one can be retrieved from the archive.

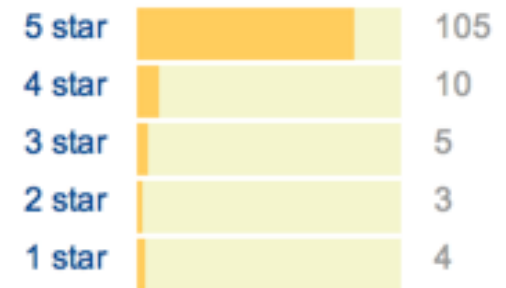
**R. Wayne Pugh, MAI, is a past president of the Appraisal Institute and the current CEO of R. Wayne Pugh and Co., a real estate consulting and appraisal firm he founded in 1975 in Baton Rouge, La. He also heads Software for Real Estate Professionals Inc., and is a principal member of Real Estate Counseling Group of America, a national organization of analysts and academicians founded by the late William R. Kinward, Ph.D. For information on his Appraisal Institute Cool Tools seminars, visit [www.appraisalstitute.org/pugh](http://www.appraisalstitute.org/pugh).**

# Data Visualization

## Fujitsu Scanner



★★★★★ (127)  
4.6 out of 5 stars





# Data Visualization Evernote

Scan everything...



# Eye-Fi SD Memory Card

Automatically upload your photos from the field.

Shoot your photos and using the personal hotspot provided with a cell phone, the Eye-Fi memory card will automatically upload your photos to your Dropbox .



# Planon Mobile Scanner and Printer

Planon's DocuPen X Series Scanner and PrintStik

Scan a document in the field, save it to your phone or computer, and print it out on your PrintStix, all with wireless connections for selected devices.

Powerful tools for the mobile professional.



# Panoramic View Cameras

Up to 180 degree panoramic photos. These cameras provide the appraiser the opportunity of showing the reader of the appraisal report important views of the surrounding property/conditions.



Sony TX 20



# Laser Distance Measuring Devices

## Ryobi RP4011LK

Home Depot Price \$99

200' Distance

10,000 measurements/charge

Options: Stabilia LD300 \$100,  
Dewalt DW030P \$122,  
Craftsman 48277 \$95, Bosch  
\$176, Prexiso X2 3350 \$120.  
Disto E7300 788211 \$199, Disto  
D2 763495 \$179, Agatec  
1-16627 \$162, Agatec DM100  
1-16745 \$108, Northwest  
Instrument NLR 60 \$157

Prices based on Google search for "laser measure"





# Mite-R-Gage

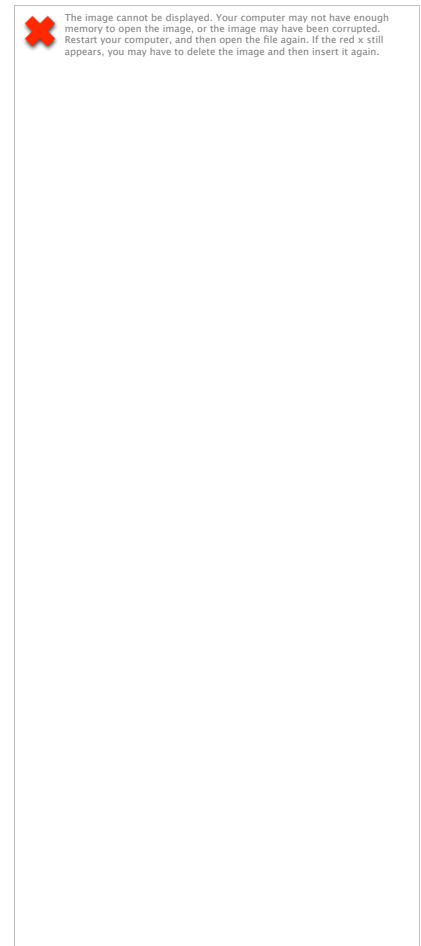
## Available From Apex

The Mite-R-Gage is ideal for easily measuring angled walls. It's essentially a protractor with 10" arms that allows you to measure any angle, including interior angles.



# Transcription Devices

Use a digital recorder to record your area property descriptions, and once you have returned to your office, upload the file to to Dragon Naturally Speaking , and the audio file will be transcribed to a written word document.



# Taking Poll Photos

## Poll Pixie \*

Inexpensive Camera Accessories for Taking Pole Photos

## Mr. Long Arm \*

The inventor of the telescopic pole.

## Easily take poll photos

Easily mount the Poll Pixie camera mounts to a Mr. Long Arm poll, attach your camera, and take pictures from a perspective previously much more difficult to obtain.



Before



With the Pole Pixie Adapter



- New Cool Tools

- **iAnnotate**

- PDF Reviewer with Editing Tools



# • New Cool Tools

## • Dropbox • Cloud Storage

	Dropbox	Dropbox Pro	Dropbox for Business
<b>Pricing</b>			
Customers			
Contact			
• Chat with sales			
• Call sales at 855-237-6726			
<a href="#">Start free trial</a> or <a href="#">buy now</a>			
<b>Price</b>	Free	\$99 / user / year	\$795 / year for 5 users \$125 / additional user / year
<b>Storage</b>	2 GB	100 GB	As much as needed
<b>Core Dropbox features</b>			
Best-in-class sync and file sharing	✓	✓	✓
256-bit AES and SSL encryption	✓	✓	✓
Two-step verification & mobile passcodes	✓	✓	✓
<b>Enhanced security</b>			
Unlimited file recovery	×	\$3.99 / month	✓
Unlimited version history	×	\$3.99 / month	✓
Prevent sharing outside of the team	×	×	✓
<b>Team management</b>			
Track logins, devices, and locations	×	×	✓
Centralized team billing	×	×	✓
Easily add and remove members	×	×	✓
SSO and Active Directory	×	×	✓
<b>Support</b>			
Priority email support	×	✓	✓
Phone support	×	×	✓
Dedicated deployment specialists	×	×	✓
	<a href="#">Sign up</a>	<a href="#">Buy Pro</a>	<a href="#">Start free trial</a>

for [www.dropbox.com...](http://www.dropbox.com...)



## Google Drive

Data storage

Google drive

Office compatible applications

Word, Excel, and PowerPoint compatibility

# • Lucid Charts

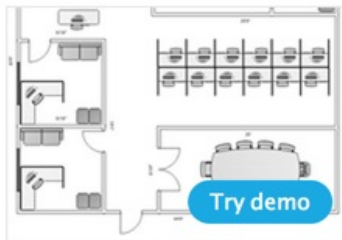


[Tour](#) [Examples](#) [Pricing](#) [Customers](#) [Blog](#)



## Floor plans done right

With Lucidchart, it's quick and easy to design floor plans for your home, office, or special event. Our comprehensive floor plan software helps you visualize any project before you begin, then customize to your liking.



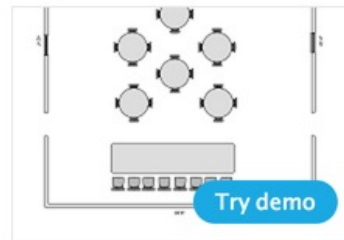
### Office floor plans

Are you relocating to a new building? Maybe you're making room for an expanding team. Whatever your needs are, an easy office floorplan generator is now at your fingertips. Drag out office-specific shapes like chairs, desks, cubicles, tables, and much more.



### Home floor plans

Whether you're building, designing, or decorating, our home floor plan library is detailed enough for any scenario. With a full range of walls, room shapes, and furniture options, you can diagram the perfect floor plan in minutes. For ease of use, all elements are scaled to size.



### Event planning

All events, from simple Sunday brunches to black tie weddings, need a comprehensive floor plan. Customize the canvas size and see the footage of each element! You can also add color to the diagram, import Visio stencils, and change object orientation.

Flowchart

Android mockups

ERD tool

iPad mockup tool

iPhone mockups

Wireframe software

UML diagram

Business process

Site map creator

Data flow diagram

Org chart software

Value stream maps

AWS network diag...

Network diagram

Rack diagram

Cisco network diag...

Circuit diagrams

# • Dragon Speech Recognition

## Dragon Home 12

\$99.99

**\$59.99**

[Buy Physical](#)

[Buy Digital](#)

### Stop typing - and start talking.

- Dragon Home Edition is perfect for anyone who wants an easier, faster, and more fun way to interact with your PC.
- Everything you need to get started, including a free high-quality headset microphone (Physical box version only)
- Dragon gets you, with up to 99% accuracy out of the box
- Create documents 3x faster than typing by hand
- **NEW!** Interactive Tutorial provides simulations to learn and practice good dictation, correction and editing habits so that you can become more proficient with Dragon in record time
- **NEW!** Free Dragon Remote Mic app lets you use iPhone®, iPod® touch (4th gen), iPad® or your compatible Android device as a remote microphone for greater freedom and flexibility
- **NEW!** Enhanced Web mail. Use with Gmail™ and Hotmail® — two of the most popular web-based email applications
- Comes with everything you need to get started, including a high-quality headset microphone (Headset microphone included with physical box version only).

## Dragon Premium 12

\$199.99

**\$119.99**

[Buy Physical](#)

[Buy Digital](#)

### The perfect personal assistant.

- Use a Nuance-approved digital voice recorder or compatible iOS device with our free Dragon Recorder app to record thoughts for later transcription to your PC
- **NEW!** Smart Format Rules allow Dragon to adapt by detecting your format corrections – abbreviations, numbers, and more — so your dictated text looks the way you want it to every time
- **NEW!** Natural-sounding text-to-speech reads back editable text for easy proofing or multitasking
- **NEW!** Enhanced Web mail. Use with Gmail™ and Hotmail® — two of the most popular web-based email applications
- **NEW!** Wideband Bluetooth support provides higher wireless accuracy
- Comes with everything you need to get started, including a high-quality headset microphone (Headset microphone included with physical box version only).

## Dragon Dictate for Mac, v4

\$199.99

**\$179.99**

[Buy Digital](#)

Physical box version available March 18.

### Just for Mac users.

- Flexible voice commands let you get things done quickly with just your voice.
- Smart Format Rules automatically adapt to how you want abbreviations, numbers and more to appear, so you don't have to correct it every time.
- Easily create custom word lists and macros for frequently used text.
- Full transcription capabilities to easily transcribe your voice memos into text.
- With up to 99% accuracy, make fewer edits and get more done.
- Speed through your to-do list by talking, not typing.
- Free Dragon Recorder app lets you record thoughts using an iPhone, iPad, or iPod touch (4th gen). Dragon Dictate will transcribe the recorded audio files when you are back at your Mac.
- Wideband Bluetooth support provides higher wireless accuracy.
- Comes with everything you need to get started, including a high-quality headset microphone (Headset microphone included with physical box version only).

Appraisal  
Institute®

Professionals Providing  
Real Estate Solutions



# • LogMeIn Remote Access

LogMeIn

Products About Us Help Labs & Betas Partners

Log In



## SIMPLY CONNECT FROM ANYWHERE.

Access, manage and support  
computers remotely.

Try it free

 **Pro**

Securely access your  
computers, files and  
apps from anywhere.

Start free trial

 **Central**

Automate tasks  
and manage  
remote computers.

Start free trial

 **Rescue**

Support end users  
on PCs, Macs, and  
mobile devices.

Start free trial

# • Mozy Online Backup



[Products](#)

[Partner](#)

[About](#)

[Sign Up](#) >

PRODUCTS > PRODUCTS > MOZYHOME – FOR PERSONAL USE

OVERVIEW

## As you wish

Years of family photos? Decades of music? Important financial documents? With Mozy online backup and sync, your digital life will always be there when you need it.

## Your files and your time are precious

Mozy is 100 percent automatic. That's pretty good. Really good, actually. Your files will be protected with the security of the Mozy cloud lined with Mozy Tritanium and, of course, it's accessible from anywhere.

[LEARN MORE](#) >

## Tons of access options

The Mozy restore process. It's good. In fact, it's better than ever. Need to access your files from your mobile device? We've got Mozy mobile apps for iOS and Android devices. Want to instantly access files on the fly? Use the web restore option. How about downloading all your files with just one click? We've got you covered—just right-click restore in Windows.

FEATURES



# • Snag-It



Search SoftwareCASA  
Enter search here... 

Software You Need - When You Need It

[Home](#) [Products](#) [Company](#) [Support](#) [Purchase](#)

## Snagit 11.4

*Capture Your Screen In More Than 40 Ways!*



**Snagit**  
**Version:** 11.4  
**Publisher:** TechSmith  
**Delivery Type:** Download  
**Operating System:** Windows 8, 7, Vista, XP  
**Language:** English  
**File Size:** 60MB  
**Recommended Price:** 49.95  
**Price:** ~~49.95~~ **\$48.95**

Options: Downloadable - \$48.95  
Quantity: 1 [Order Now!](#)  
**100% Secure Ordering**

[Request Multi User Quote](#) [Upgrade Your Software](#)

[Print](#) [Bookmark](#)

Snagit for Mac 

5-User Snagit  
\$36.95 per user 

10-User Snagit  
\$28.95 per user 

25-User Snagit  
\$22.99 per user 

**30 days** MONEYBACK GUARANTEE  
[click here](#)

New Software! 



# • WolframAlpha Computational Knowledge Engine

*New:* Practice math problems and more online with Wolfram Problem Generator.

Sign in » |  

Try our new background colors 



Enter what you want to calculate or know about:



 Examples  Random

# • WordRake Editor

# WORDRAKE.

EDIT FOR CLARITY AND BREVITY IN MICROSOFT WORD

HOME

SOFTWARE

BUY

TIPS

ABOUT

SUPPORT

"By ~~virtue of~~ servicing the 703 Account, JPMC ~~was~~  
<sup>had</sup> ~~required~~ to monitor BLMIS. ~~It was this that~~ led JPMC to  
<sup>This</sup> ~~uncover a number of~~ <sup>several</sup> red flags indicating ~~that~~ Madoff was  
engaging in fraud."

— SECURITIES INVESTOR CORP. v. BERNARD L. MADOFF INV. SECS. and JPMORGAN CHASE & CO.  
February 9, 2011 - Complaint

## Clear and Concise in Two Clicks

Your reputation rides with everything you write: to a client, to a customer, to a colleague. With WordRake, an add-in to Microsoft Word, make that writing clear, concise, and compelling.

Select your text in Word and click the Rake button to see edits for clarity and brevity. Accept the suggestions you like. WordRake can edit 25 pages in one minute, and WordRake suggestions impress even the best writers. [LEARN MORE](#)

BUY IT  
NOW



Three convenient  
plans

FREE  
3-DAY TRIAL



No credit card  
required

# • The best small notebook

## Lenovo Yoga 2 Pro Laptop

CORE i3 CORE i5 CORE i7



### DAZZLING 13.3" MULTIMODE ULTRABOOK™

The Intel®-inspired Yoga 2 Pro is a PC, tablet, and more. Its super-high resolution, multitouch display flips back 360° to offer four different usage modes: Laptop, Tablet, Stand, and Tent.

[Explore Features](#)



LAPTOP TABLET TENT STAND

Starting at

**\$1,399.00**

[VIEW MODELS](#)



★★★★★  
[Read all 102 reviews](#)  
[Write a review](#)

Search our questions and answers

Type in your question & press enter.

or [Browse 255 questions and 577 answers](#)





# • SSD Drives



lifehacker

Search

RECOMMENDED BY ADAM DACHIS

How I Went Completely Paperless in Two Days

The Three Most Important Things Lifehacker Taught Me (Also, Pranks)

Turn Your Bike into a Safe-at-Night TRON-Cycle with EL Wire

SofaPlay Streams Media from Your Mac to Your TV via Drag and Drop

Turn Two Gas Cans into a Serious Speaker Set

Shreddies Underwear Filter Out the Unpleasant Smell of Your Farts

Turn Ice Cream into Muffins with Just One Extra Ingredient

StorageStatus Monitors Your Hard Drive's Power Consumption

Get Free Document Shredding (Plus Other Free Goodies) for Tax Day

Carousel Auto-Organizes and Shares Photos with

## The Complete Guide to Solid-State Drives



Adam Dachis

Filed to: EXPLAINERS 2/07/14 5:00pm

548,668 🔥 25 ★ ▼



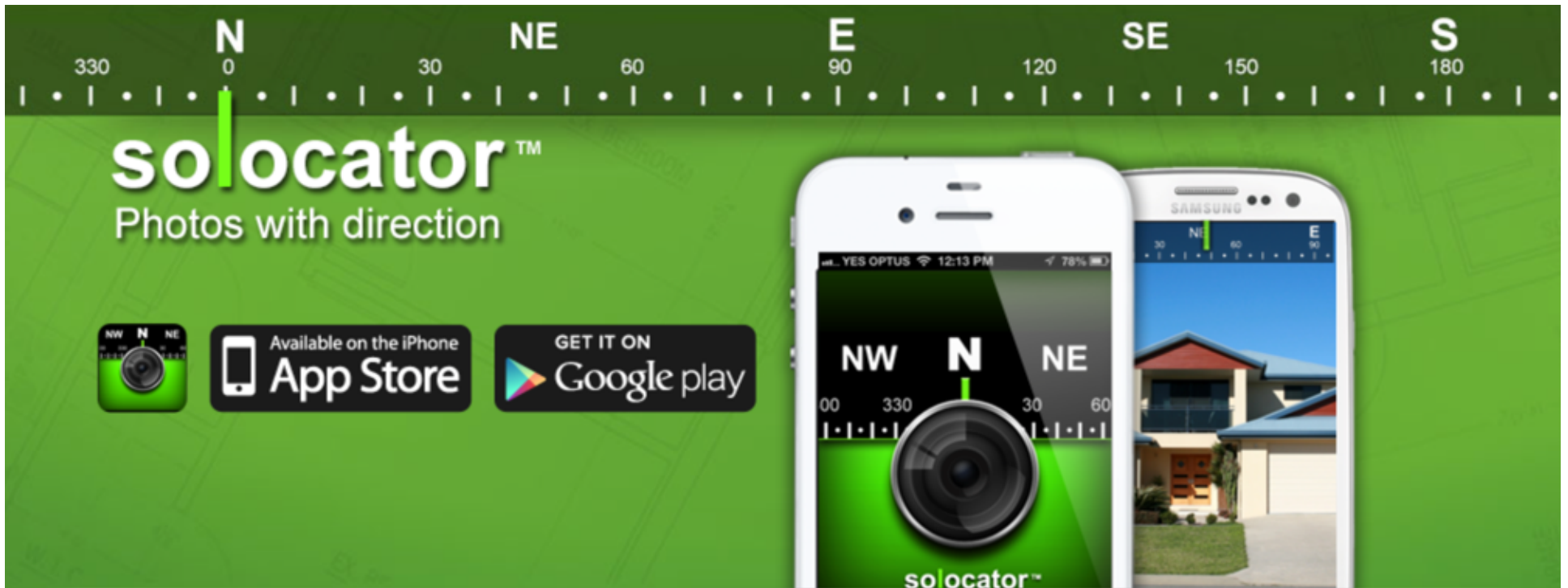
# • FEMA Flood Maps

- [Click here](#) to for FEMA's Web site.
- There is a tutorial that explains how to make FIRMette maps in the bottom right corner of the FEMA Web site.
- How do I create a flood map?
- Enter the property address "Product Search." Then choose "Public Flood Map".
- Click the green button to "View" the map.
- Click "Make FIRMette."
- Drag the "red box" over the property and center it.
- Click on the "Image File" or "PDF" button.
- Click on the "Save your FIRMette" button.
- Click "Open" to load the file in your image Editor or click "Save" to save the image file to your drive as a "TIFF" image file.



# • Solocator

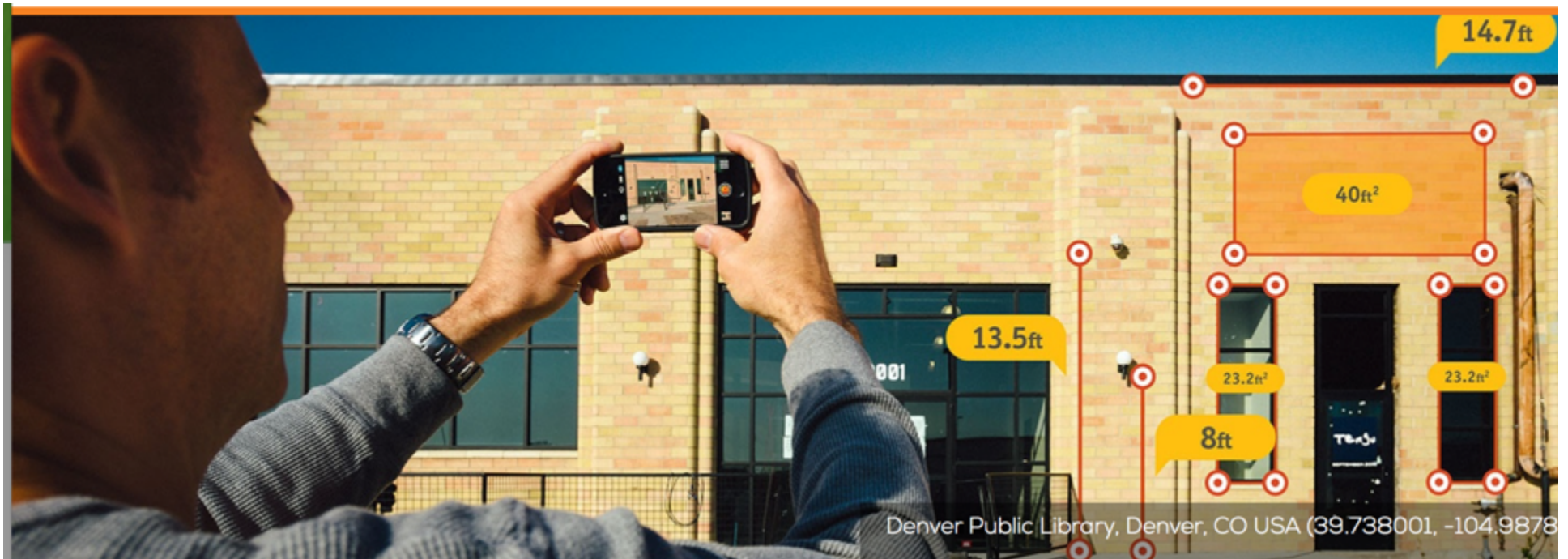
## Photos with Direction and Elevation



The advertisement features a green background with a white compass scale at the top, ranging from 0 (N) to 180 (S) in increments of 30. The word "solocator" is prominently displayed in white, with "Photos with direction" underneath. Below the text are three icons: a camera lens, the "Available on the iPhone App Store" logo, and the "GET IT ON Google play" logo. On the right, two smartphones are shown. The left smartphone displays the app's interface with a camera lens and a compass scale. The right smartphone displays a photo of a house with a blue roof and a white garage, with a compass scale overlaid on the top of the image.

# Spike

## First laser accurate Smartphone measurement solution



Spike allows you to measure an object simply with a snap from your Smartphone or Tablet. From that photo you can capture real time measurements including height, width, area, length, and target location.



# • Minimum Hardware Requirements

OS	Windows 7 or 8
CPU	Fast Processor
Monitor	Two 20" monitors
Mouse	Wireless is best
Keyboard	Wireless is best
RAM (Memory)	8 GB or greater
Graphics Board	Support for dual (2) monitors
Hard Drive	One Terabyte or larger, 7200 RPM



# • Excellent Magazines/Papers To Read

- Wired
- Fast Company
- PC
- PC World
- Forbes
- Mac World
- Mac Life
- Fortune
- Wall Street

FAST COMPANY



WIRED

PC

PCWorld

Forbes

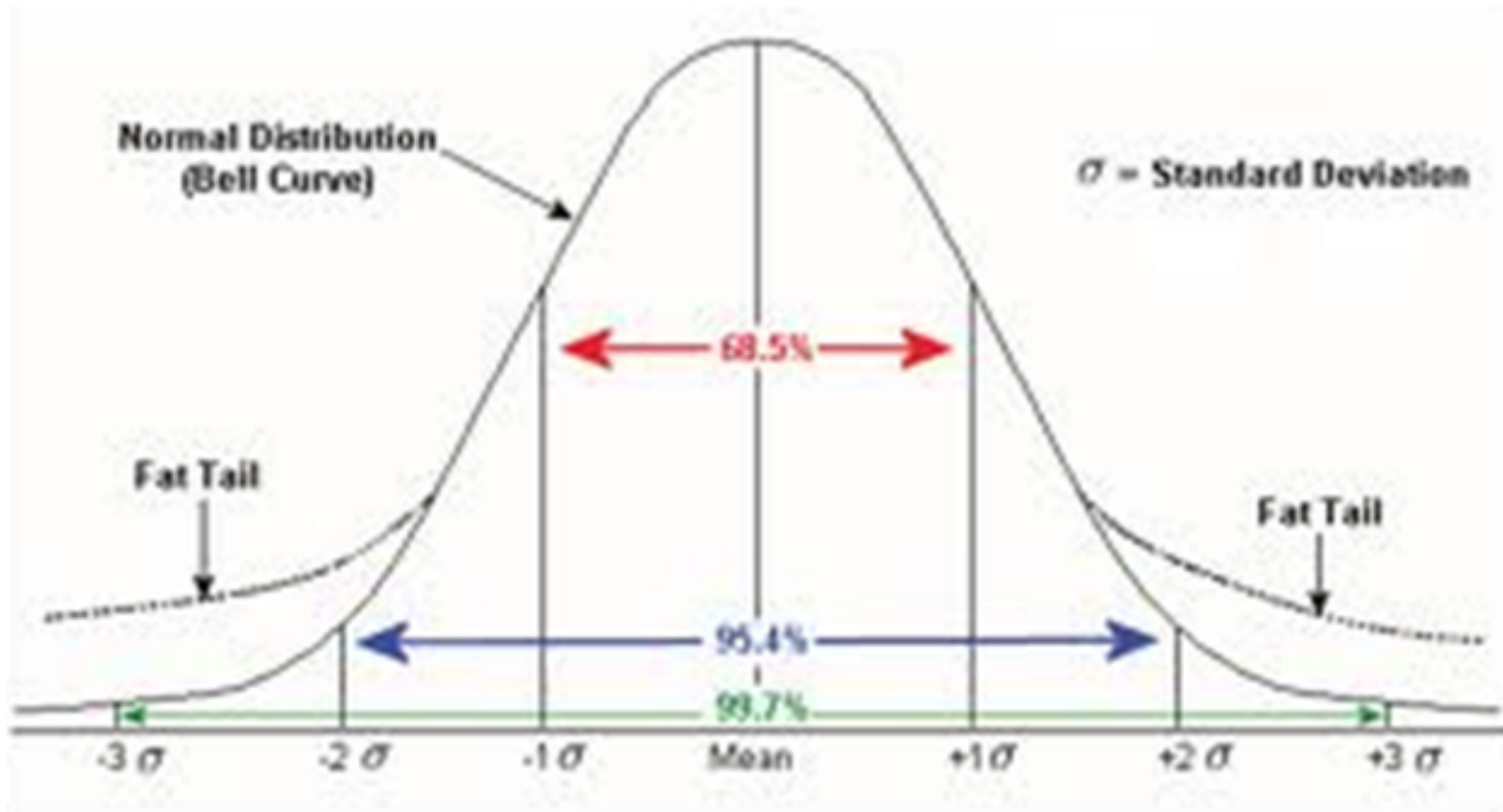
Macworld

Mac|Life

FORTUNE

WallStreet

# Traditional Statistics

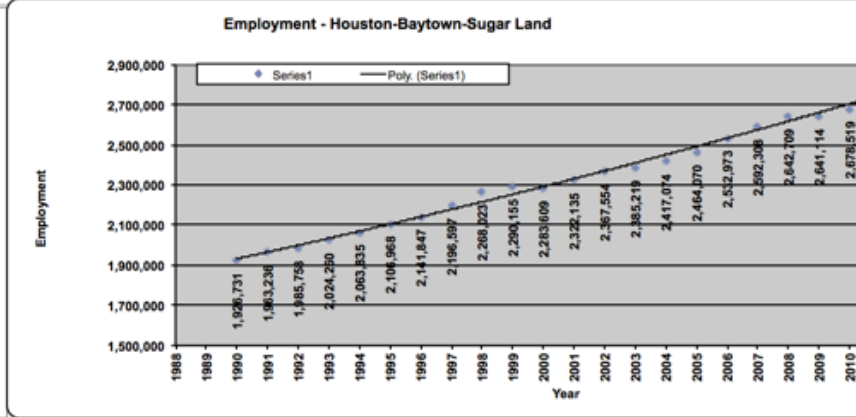
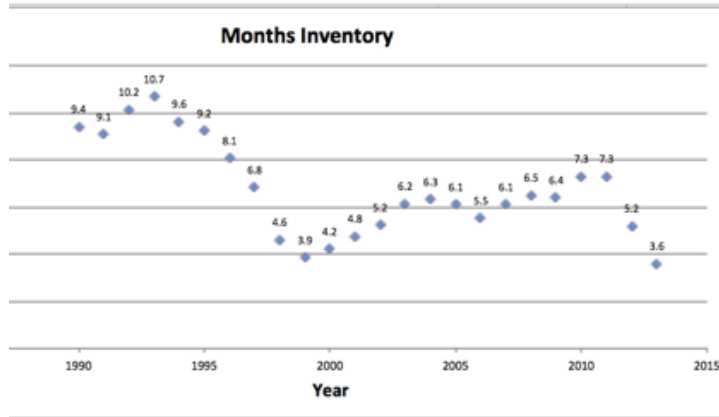
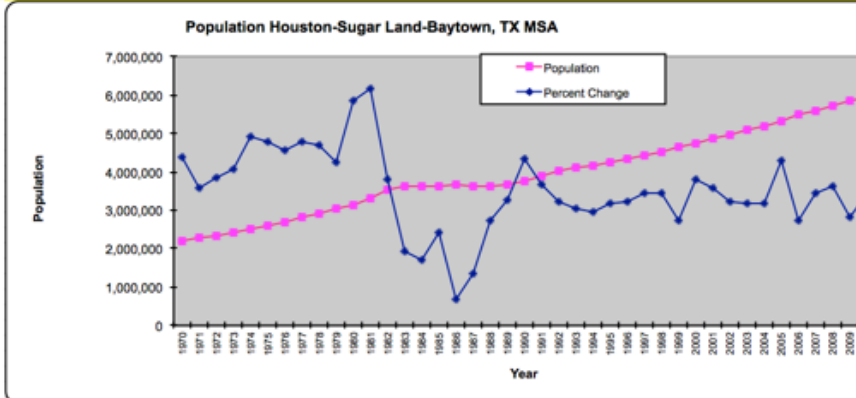


# Frank's Regression Model

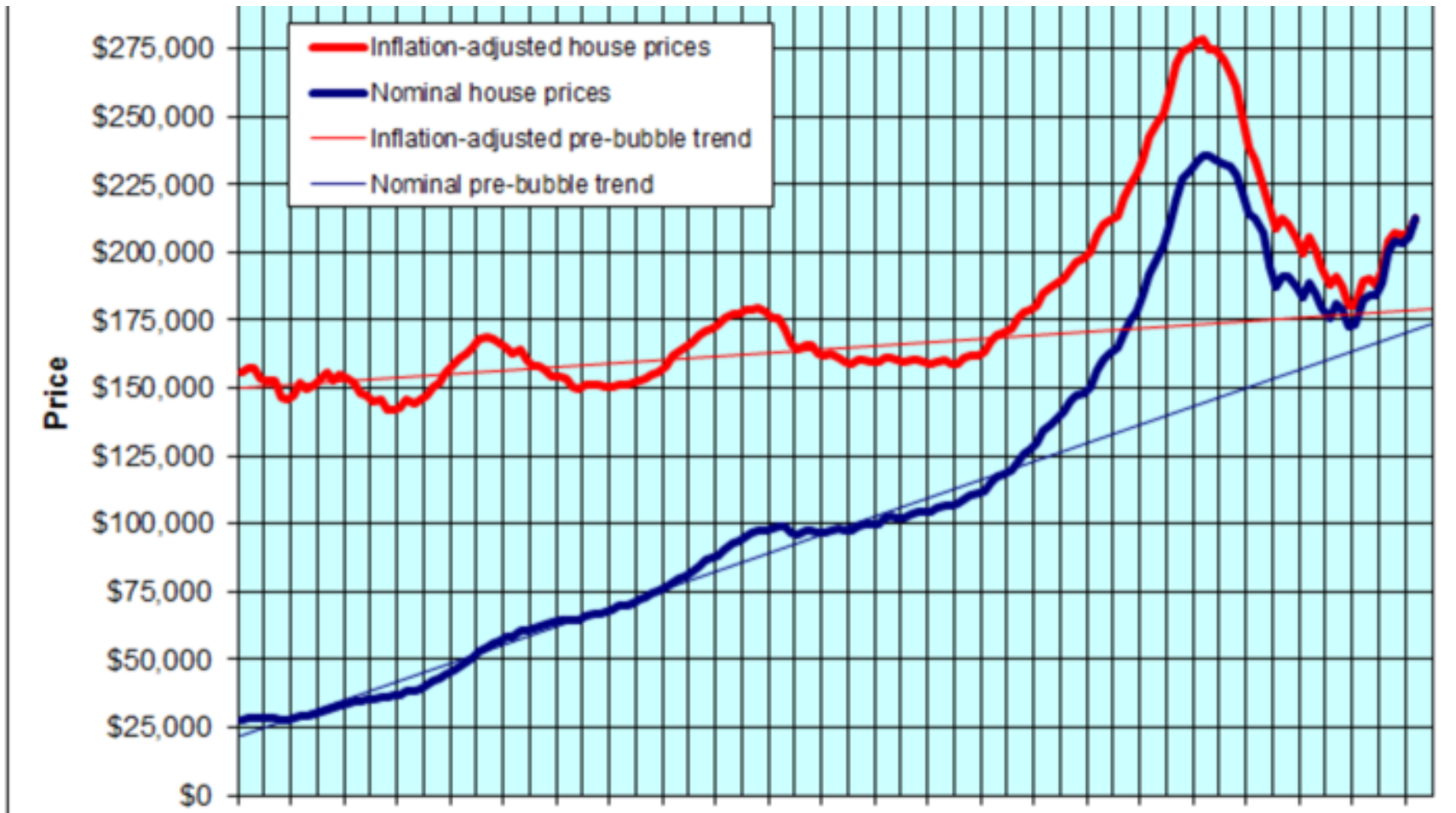
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	SUMMARY OUTPUT														
2															
3	<b>Regression Statistics</b>														
4	Multiple R	0.911251821													
5	R Square	0.830379881													
6	Adjusted R Square	0.828965201													
7	Standard Error	366578.4192													
8	Observations	1210													
9															
10	<b>ANOVA</b>														
11		<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>									
12	Regression	10	7.88774E+14	7.88774E+13	586.9736946	0									
13	Residual	1199	1.61121E+14	1.3438E+11											
14	Total	1209	9.49895E+14												
15															
16		<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 99.0%</i>	<i>Upper 99.0%</i>						
17	Intercept	-16837710.24	1579013.479	-10.66343667	0.0000	-19935647.04	-13739773.44	-20911463.95	-12763956.53						
18	Yr_Impr	8402.426571	809.0505088	10.38554019	0.0000	6815.114383	9989.73876	6315.128041	10489.7251						
19	Total_Building_Area	278.2266463	11.9408267	23.30045091	0.0000	254.7994071	301.6538854	247.4200777	309.0332149						
20	Total_Land_Area	29.36970424	1.596301939	18.39858959	0.0000	26.23784844	32.50156003	25.2513474	33.48806107						
21	Room: Bedroom	-26749.10284	16148.4174	-1.65645352	0.0979	-58431.40139	4933.195708	-68410.98617	14912.78048						
22	Room: Full Bath	-3059.532521	13821.60626	-0.22135868	0.8249	-30176.75678	24057.69174	-38718.39204	32599.327						
23	Room: Half Bath	36261.40975	17186.33995	2.109897153	0.0351	2542.764757	69980.05474	-8078.247343	80601.06684						
24	Asphalt Tennis Court - Residential	964.4728698	261556.8962	0.00368743	0.9971	-512195.6387	514124.5845	-673835.5788	675764.5245						
25	Concrete Tennis Court - Residential	-546911.0844	261369.4106	-2.092483138	0.0366	-1059703.36	-34118.80922	-1221227.435	127405.2663						
26	Gunite Pool	141.9354282	40.00817253	3.54766087	0.0004	63.44161449	220.4292419	38.71690373	245.1539526						
27	Pool SPA with Heater	129126.4992	32746.22141	3.943248827	0.0001	64880.23049	193372.7679	44643.34382	213609.6545						
28															
29															
30															
31	RESIDUAL OUTPUT														
32															
33		<i>Observation</i>	<i>Predicted Total_Market_Value</i>	<i>Residuals</i>											
34		1	2742432.805	-405911.8055											
35		2	1341012.943	-244012.9427											
36		3	1389887.141	-285303.1414											
37		4	1613525.744	-74946.74387											
38		5	2275977.551	-526203.5514											
39		6	2620222.00	402010.0805											

# Franks Market Analysis

## MARKET CONDITIONS IN GREATER HOUSTON, TX



# JP's Real Estate Charts



# Dynamo Appraiser

## Sale Price / Gross Living Area

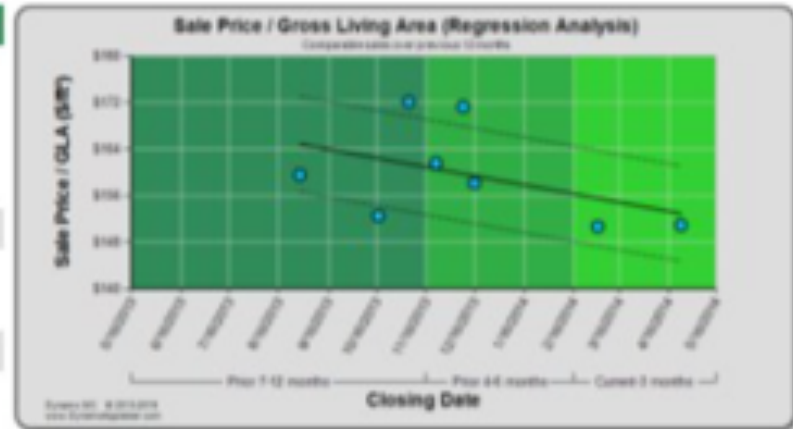
Regression Equation:  $y = -0.0502x + 170$   
 Correlation coefficient: -0.448  
 Coefficient of determination: 20.11%  
 Estimated standard error: \$8.19

As of 5/16/2013:

Projected Value: \$170.15  
 Projected Range: \$161.97 to \$178.34

As of 5/16/2014:

Projected Value: \$151.84  
 Projected Range: \$143.65 to \$160.03



## List Price / Gross Living Area

Regression Equation:  $y = 0.0316x + 173$   
 Correlation coefficient: 0.441  
 Coefficient of determination: 19.46%  
 Estimated standard error: \$12.57

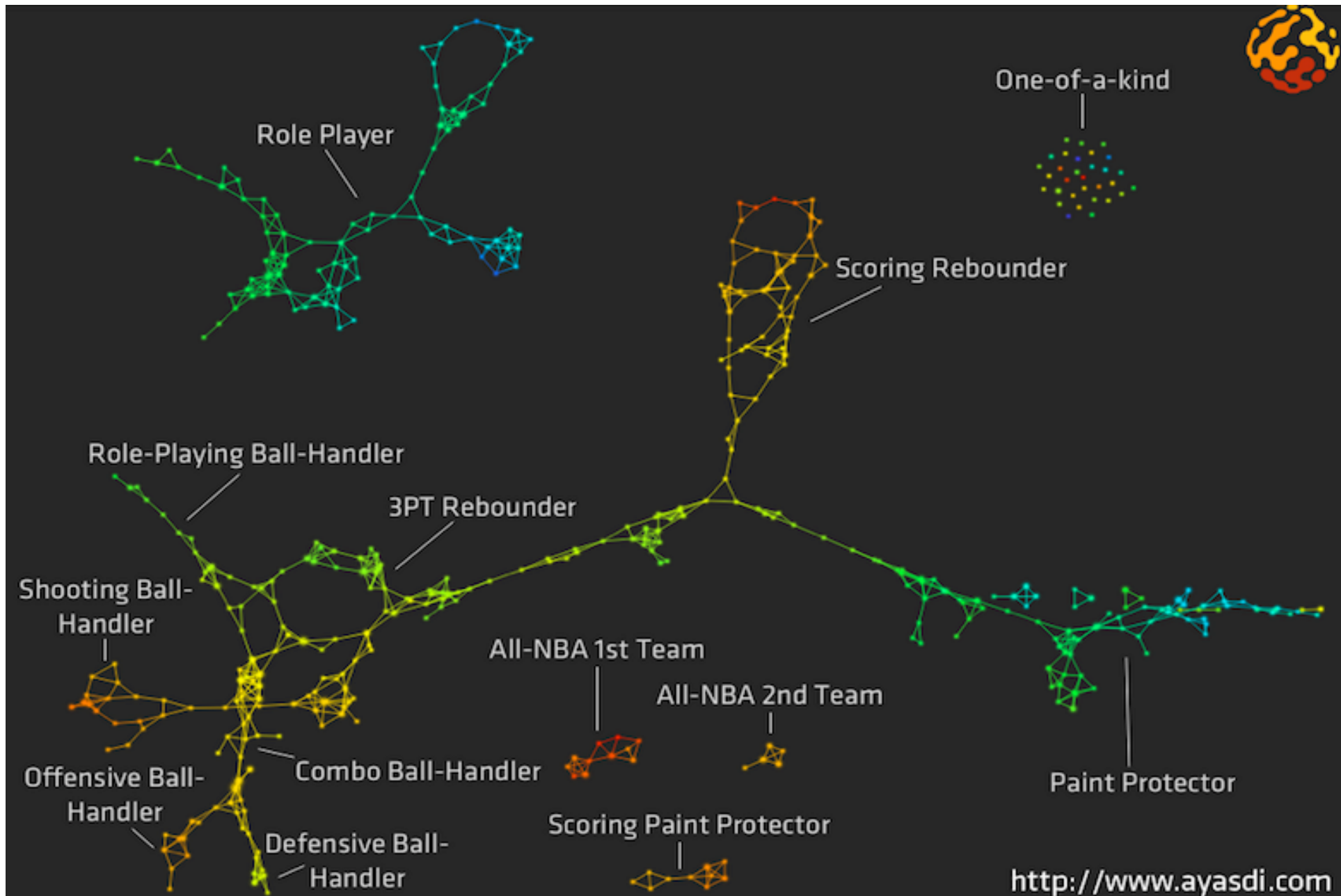
As of 5/16/2013:

Projected Value: \$173.06  
 Projected Range: \$160.49 to \$185.64

As of 5/16/2014:

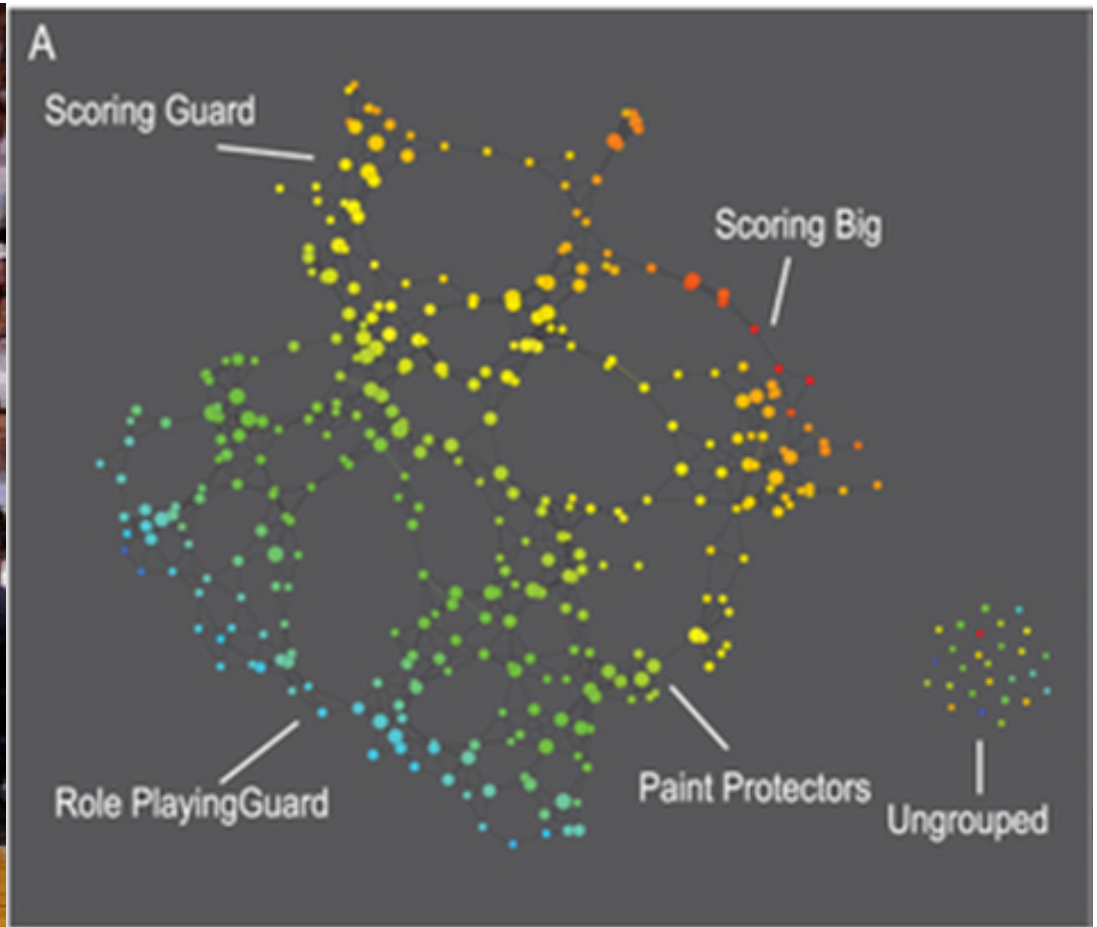
Projected Value: \$184.60





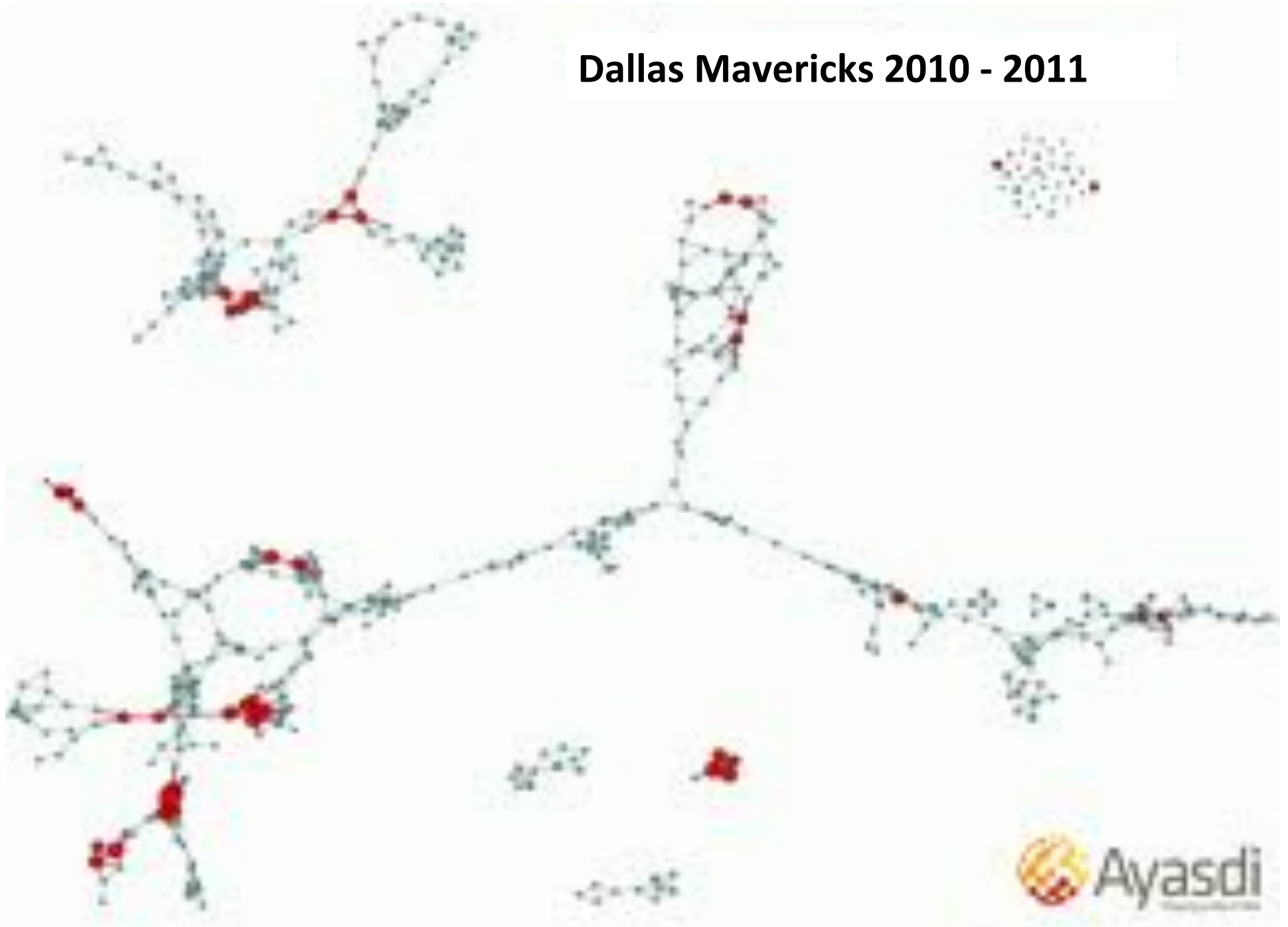


# Basketball Topology

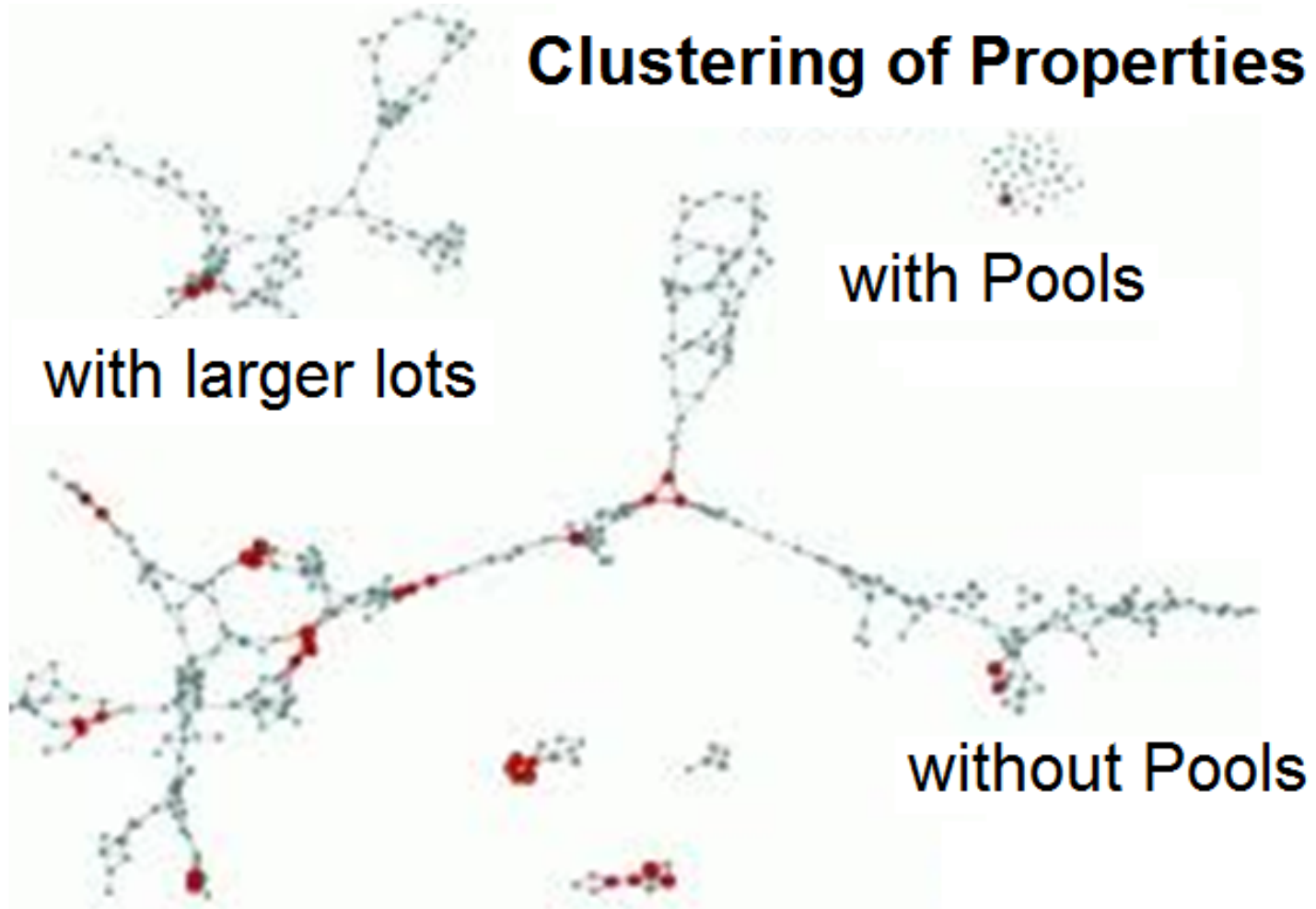




# Dallas Mavericks 2010 - 2011

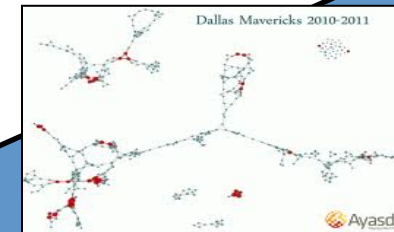


# Topology Market Analysis

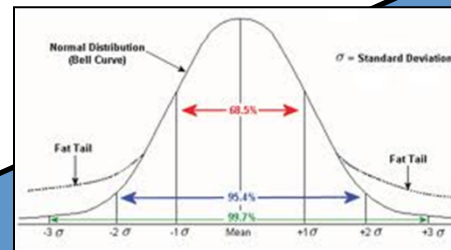


# The World is Changing

## Advanced Analytics



## Statistics



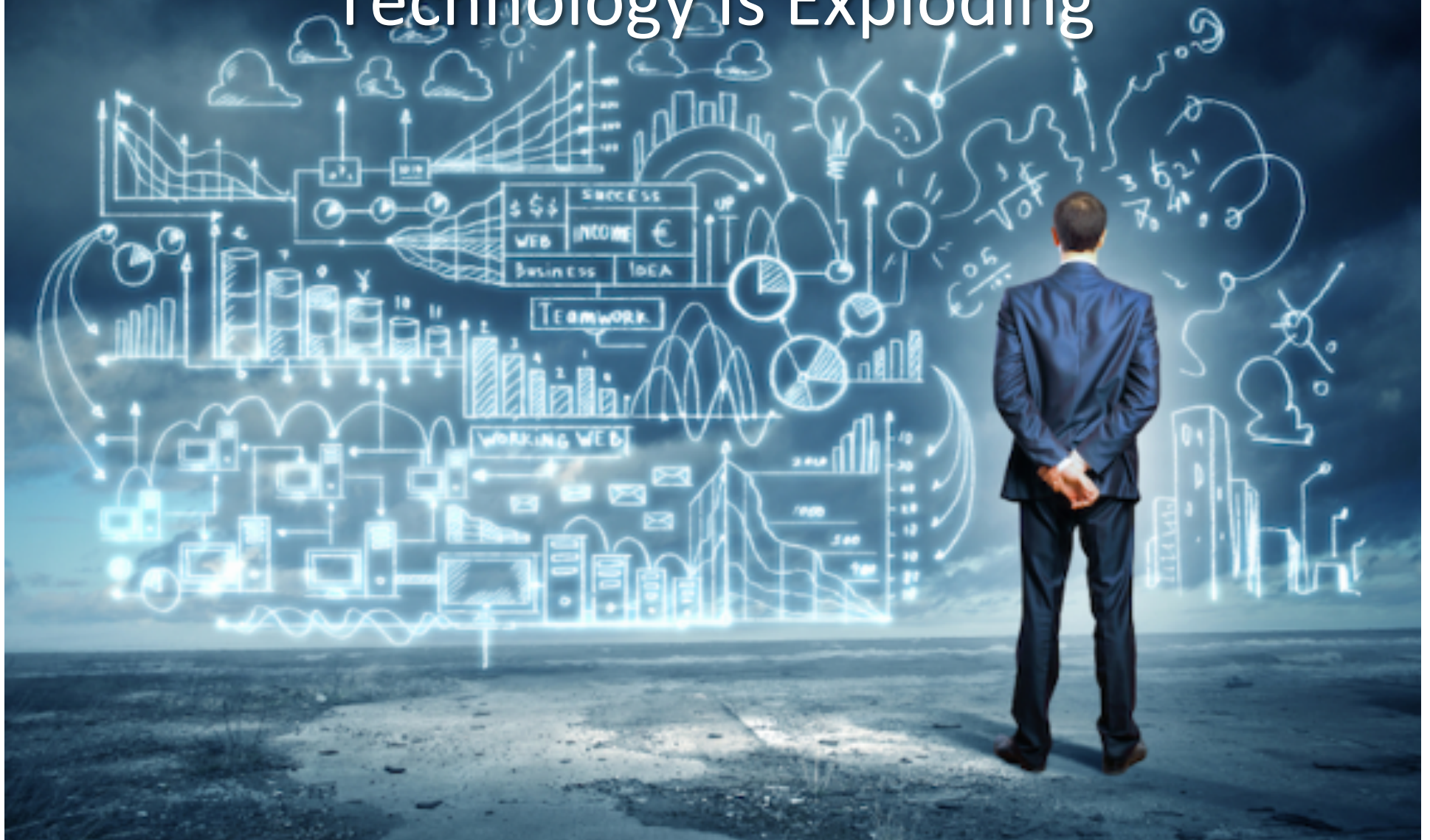
## 3 Comps

FEATURE	SUBJECT	COMPARABLE SALE #1	COMPARABLE SALE #2	COMPARABLE SALE #3	
Address	281 WOOD PINE AC2 HOVELL, MI 48843	283 WOOD PINE Marion Twp, Michigan 48843	288 WOOD PINE Marion Twp, Michigan 48843	2284 Crystal Crossing Drive Marion Twp, Michigan 48843	
Acres in Sale	0.053 ac	0.053 ac	0.053 ac	0.102 ac	
Site Price	\$ 128,200	\$ 140,000	\$ 115,000	\$ 125,000	
PerAc/TotalSite/Usr Area	\$ 85.58 / ac \$ 140.00 / ac \$ 140.59 / ac	\$ 85.58 / ac \$ 140.00 / ac \$ 140.59 / ac	\$ 85.58 / ac \$ 115.00 / ac \$ 115.00 / ac	\$ 85.58 / ac \$ 125.00 / ac \$ 125.00 / ac	
Mileage	0	0	0	0	
Days on Market	0	0	0	283	
VALUATION ADJUSTMENTS		VALUATION ADJUSTMENTS		VALUATION ADJUSTMENTS	
Construction	Cash Sale	Cash Sale	Cash Sale	Cash Sale	
Date of Sale	06/20/14	06/20/14	06/20/14	06/20/14	
Location	NRW	NRW	NRW	NRW	
View	NRW	NRW	NRW	NRW	
Site Area	0	0	0	0	
Quality	Q3	Q3	Q3	Q3	
Actual Age	10	10	10	10	
Condition	C3	C3	C3	C3	
Notes on Deal	Taxp. Status: Sale	Taxp. Status: Sale	Taxp. Status: Sale	Taxp. Status: Sale	
Room Count	0	2	2	2	0
Shops/Lump Area	1,508 sq.ft	+1,000sq.ft	+1,000sq.ft	+1,000sq.ft	+15,522
Business Area	1,508 sq.ft	+1,000sq.ft	+1,000sq.ft	+1,000sq.ft	+15,522
Business/Enthal Area	0	0	2	2	-3,250
Gar Space	2	2	2	2	
Asphalt	1	1	1	1	
Net Asbestos (lb)		121	7,378	121	6,787
Adjusted Site Price	\$95,200	\$95,200	\$95,200	\$95,200	\$22,800
Commission		147,378	147,378	147,378	147,378

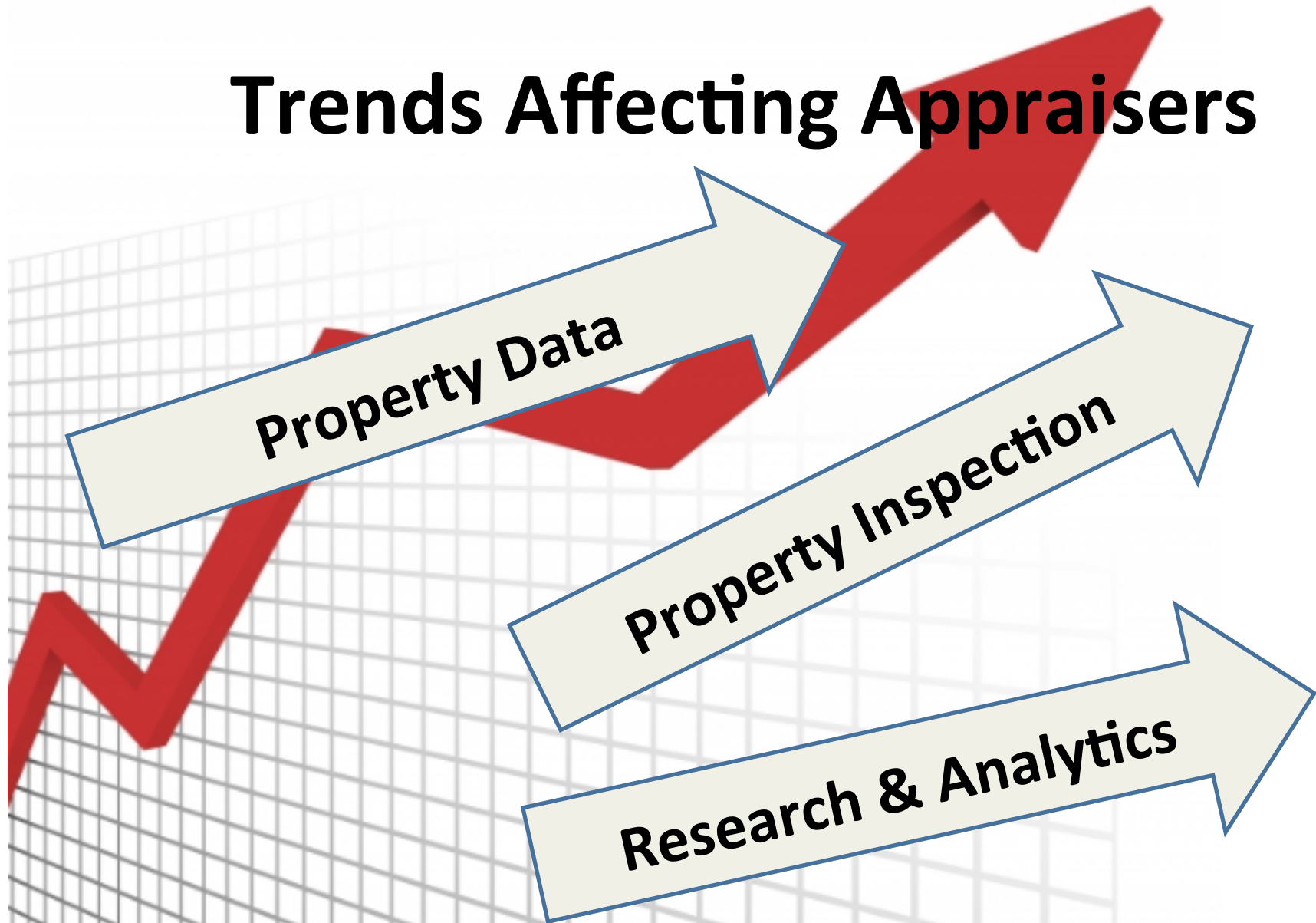




# Technology Is Exploding

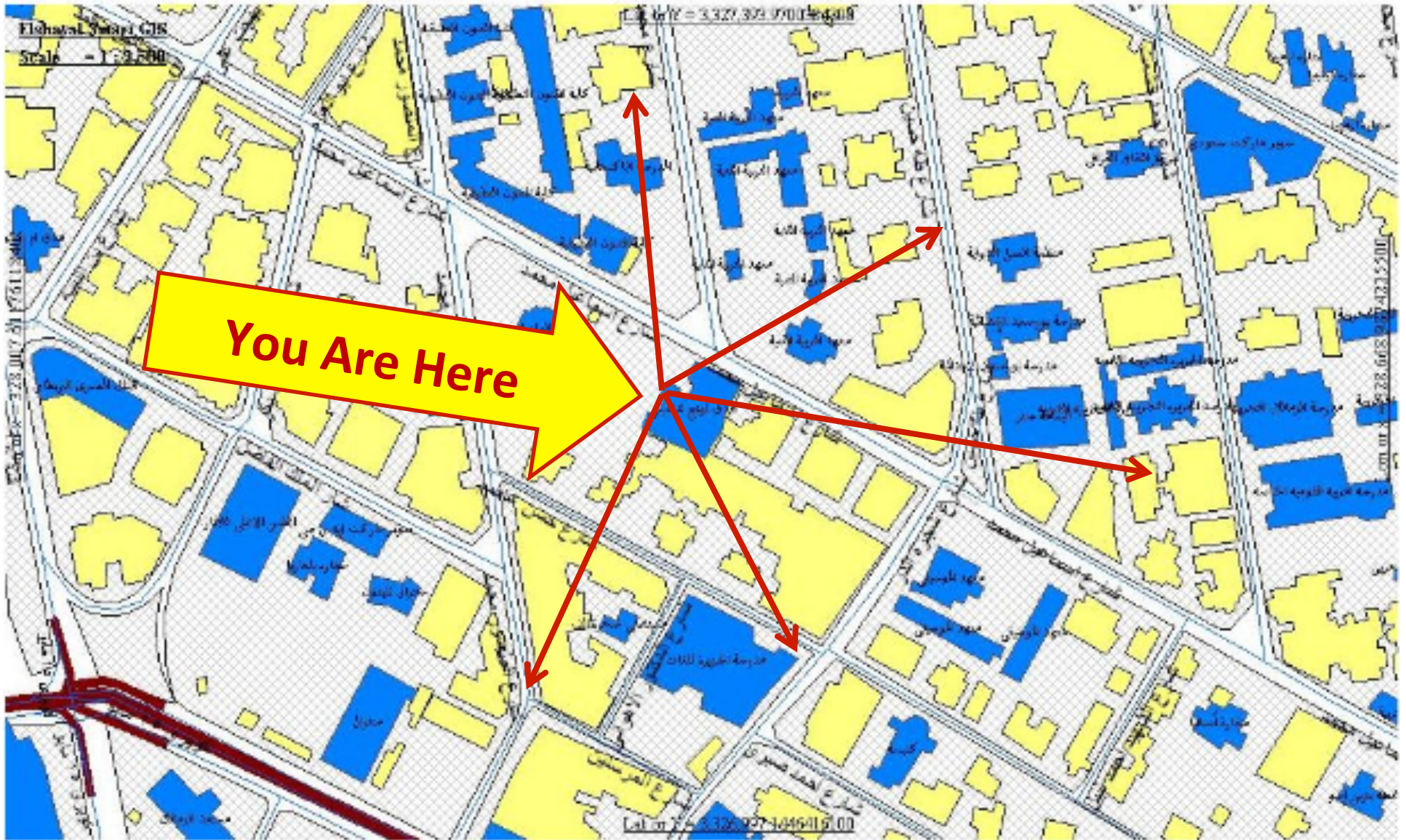


# Trends Affecting Appraisers





# Location Based Information



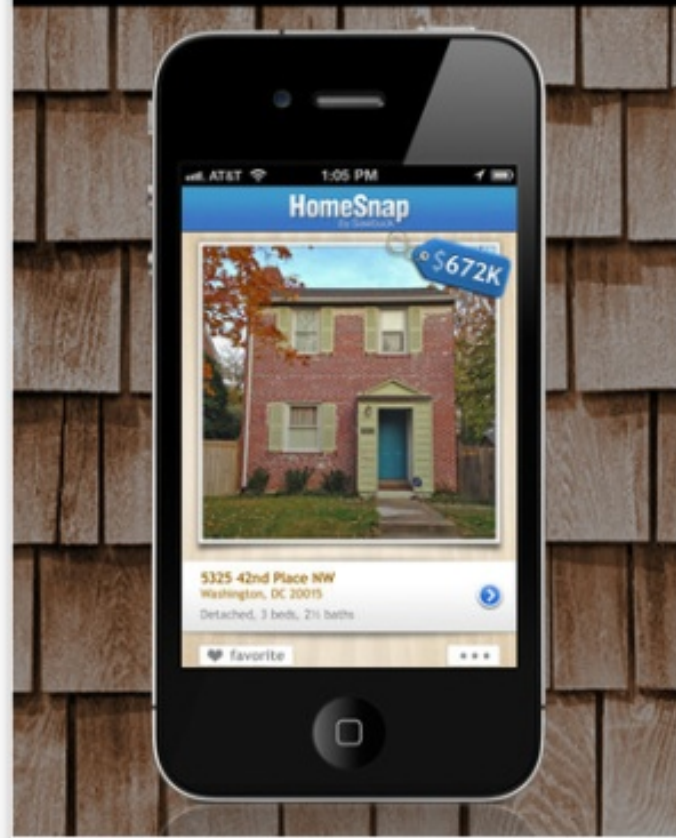


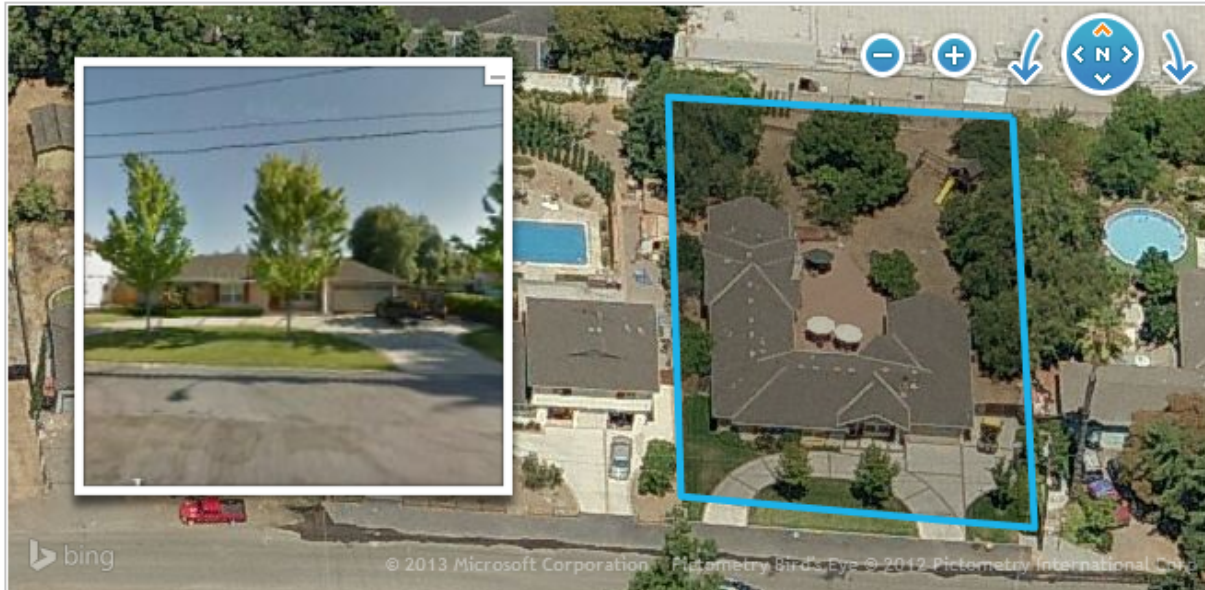
# Location Based Information

Snap a picture of  
any home...



...to find out  
all about it.





**14541 Weeth Drive San Jose, CA 95124**

\$889,950  
LOW

**\$1,047,000** ?

\$1,204,050  
HIGH

VALUE ESTIMATE

Value Estimate	\$1,047,000 ?	Beds	5	AC	Yes
Payment Estimate	\$4,027/mo ?	Baths Full	--	Heating	Yes
Rent Estimate	\$4,030 ?	Baths Half	--	Stories	1
Tax Estimate	\$6,320 ?	Sq Ft	2,965	Address Stories	1
HomeScore	76 ?	Lot Size	0.40	Parking	Garage
InvestorScore	35 ?	Construction	--	Parking Spaces	2
Last Sale Date	05/07/1996	Style	--		
Last Sale Price	\$205,000	Year Built	1951		



The image cannot be displayed. Your computer may not have enough memory to open the image, or the image may have been corrupted. Restart your computer, and then open the file again. If the red x still appears, you may have to delete the image and then insert it again.

# Augmented Reality

[Blaise Aguera Demos Augmented-reality Maps](#)

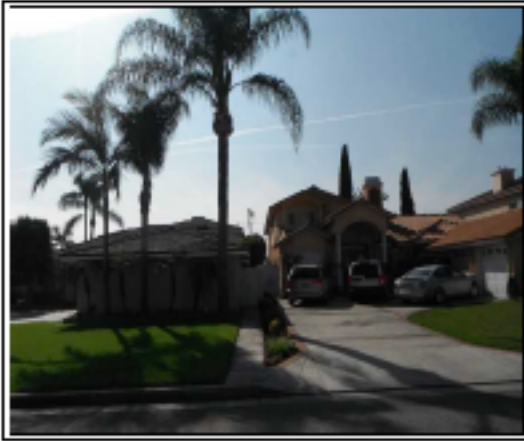
Here

2015, 2016		5963,400		\$1,167,916	
		%			
Value Estimate	\$945,400	Book	6	AC	Yes
Percent Estimate	15.85	Ratio Est.	6	Weight	Yes
Value Estimate	\$3,220,000	Ratio Est.	-	Option	-
Value Estimate	\$14,527,000	Cap Ex	2,500	Options Number	1
Value Estimate	76	Cap Est.	6,400	Parking	Garage
Value Estimate	27	Operations	-	Parking Spaces	7
Value Estimate	16,020,000	Other	800		
Value Estimate	1,100,000	Other Ratio			



# Aerial Imagery - Pictometry

Front View



Top View



North View



West View



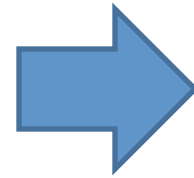
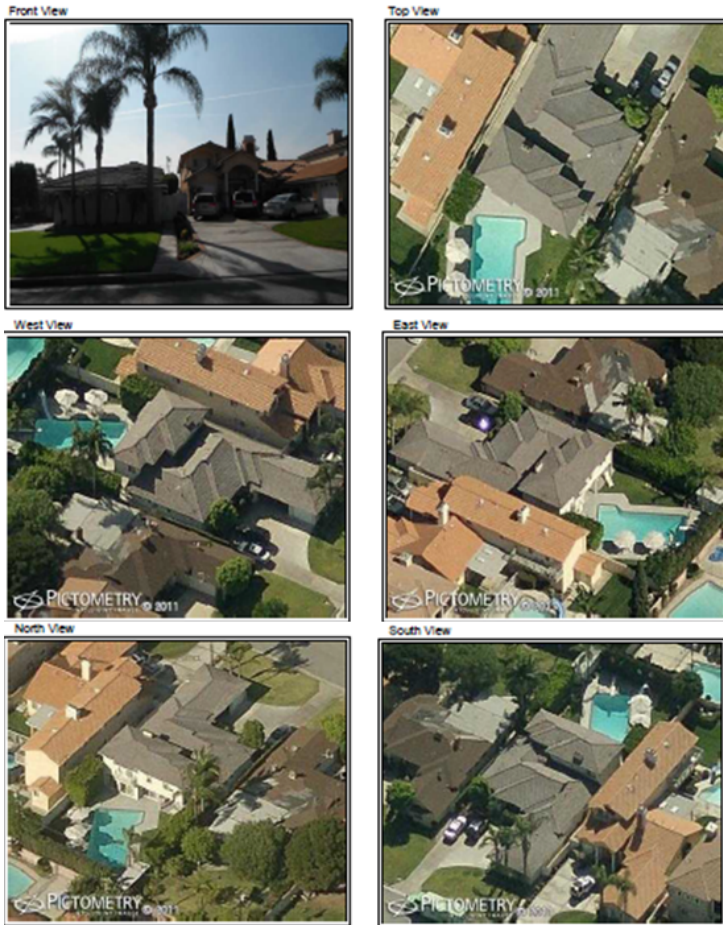
East View



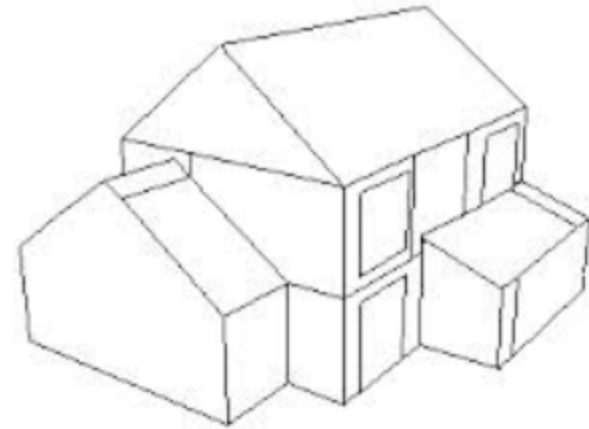
South View



# Imagery Becomes Information



Produce Sketch



+

Automatically  
Calculate GLA



# The Drones Are Coming

**Drone usage for Property Inspection will increase**

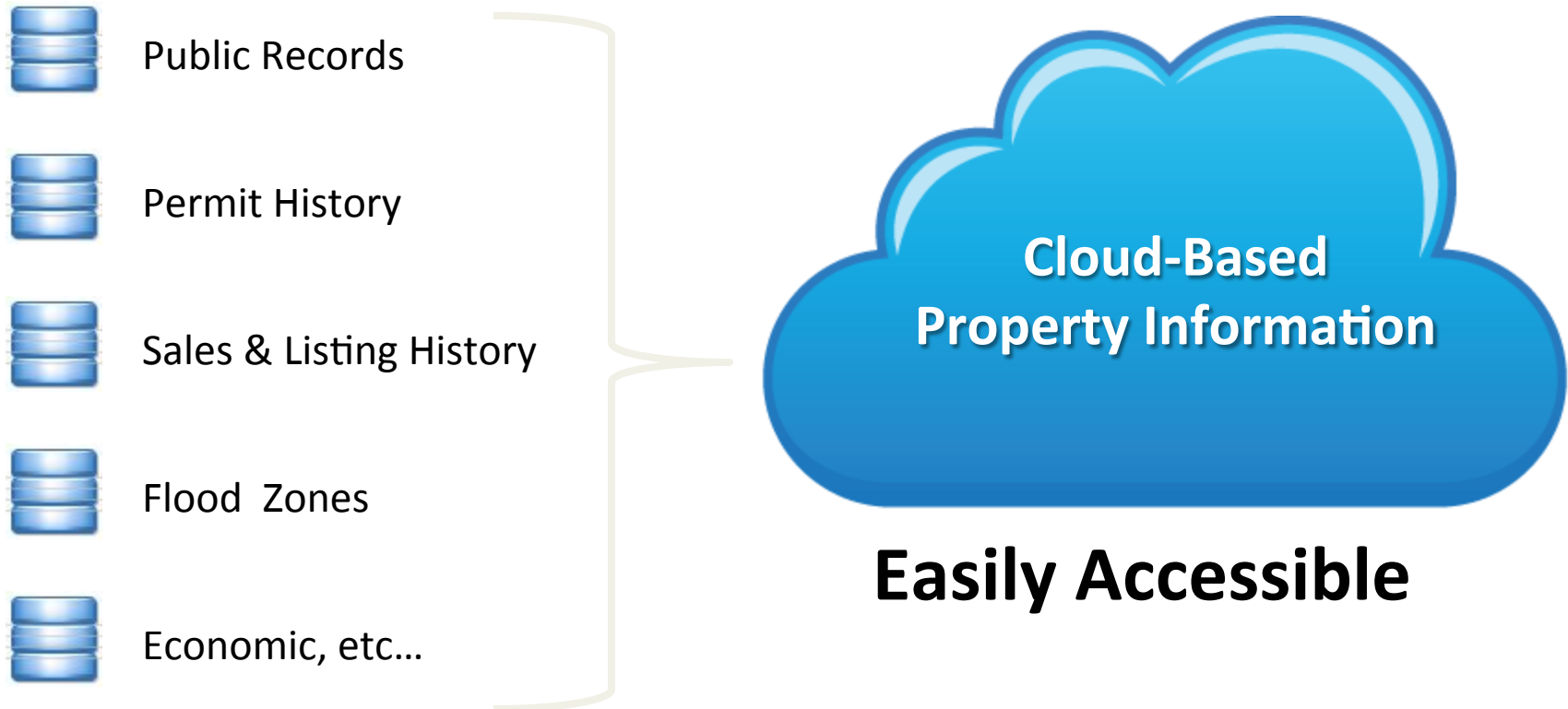


# Sources of Data are Growing



# Property Data Growth Accelerating

## Consolidation of Property Data







**Real Estate Research and Analysis  
will accelerate as property data  
becomes more accessible**

# **SPATIAL ANALYSIS OF THE IMPACT OF VACANT, ABANDONED AND FORECLOSED PROPERTIES**

**Submitted to  
Office of Community Affairs  
Federal Reserve Bank of Cleveland**

**November 2008**

**Brian A. Mikelbank**

**Research conducted as Visiting Scholar, Community Affairs  
Federal Reserve Bank of Cleveland**

**Associate Professor of Urban Studies  
Director, Center for Planning Research and Practice  
The Housing Research & Policy Initiative  
Maxine Goodman Levin College of Urban Affairs  
Cleveland State University**

# Accurate Appraisals in a Rural Market: Some Problems and Solutions

---

**In a rural market, appraisals are often problematic—properties are extremely diverse and there are few sales. Because an appraiser is obligated to accurately reflect the market and to convey this understanding to the underwriter, specialized appraisal techniques are required to maintain accuracy in rural markets. Basing a rural appraisal on a format used for standard suburban markets can compromise accuracy.**

---



**EVALUATING SUBDIVISION CHARACTERISTICS  
ON SINGLE FAMILY HOUSING VALUE  
USING HIERARCHICAL LINEAR MODELLING**

Contact Author:

Woo-Jin Shin, Ph.D.

Korea Real Estate Research Institute

4F, 275 Yangjae-dong, Seocho-gu,

Seoul, 137-130, Korea

**USING MULTIPLE CRITERIA DECISION ANALYSIS (MCDA) TO ASSIST IN  
ESTIMATING RESIDENTIAL HOUSING VALUES**

**Fernando A. F. Ferreira**

**School of Management and Technology, Polytechnic Institute of Santarém  
Complexo Andaluz, Apartado 295, 2001-904 Santarém, PORTUGAL  
and**

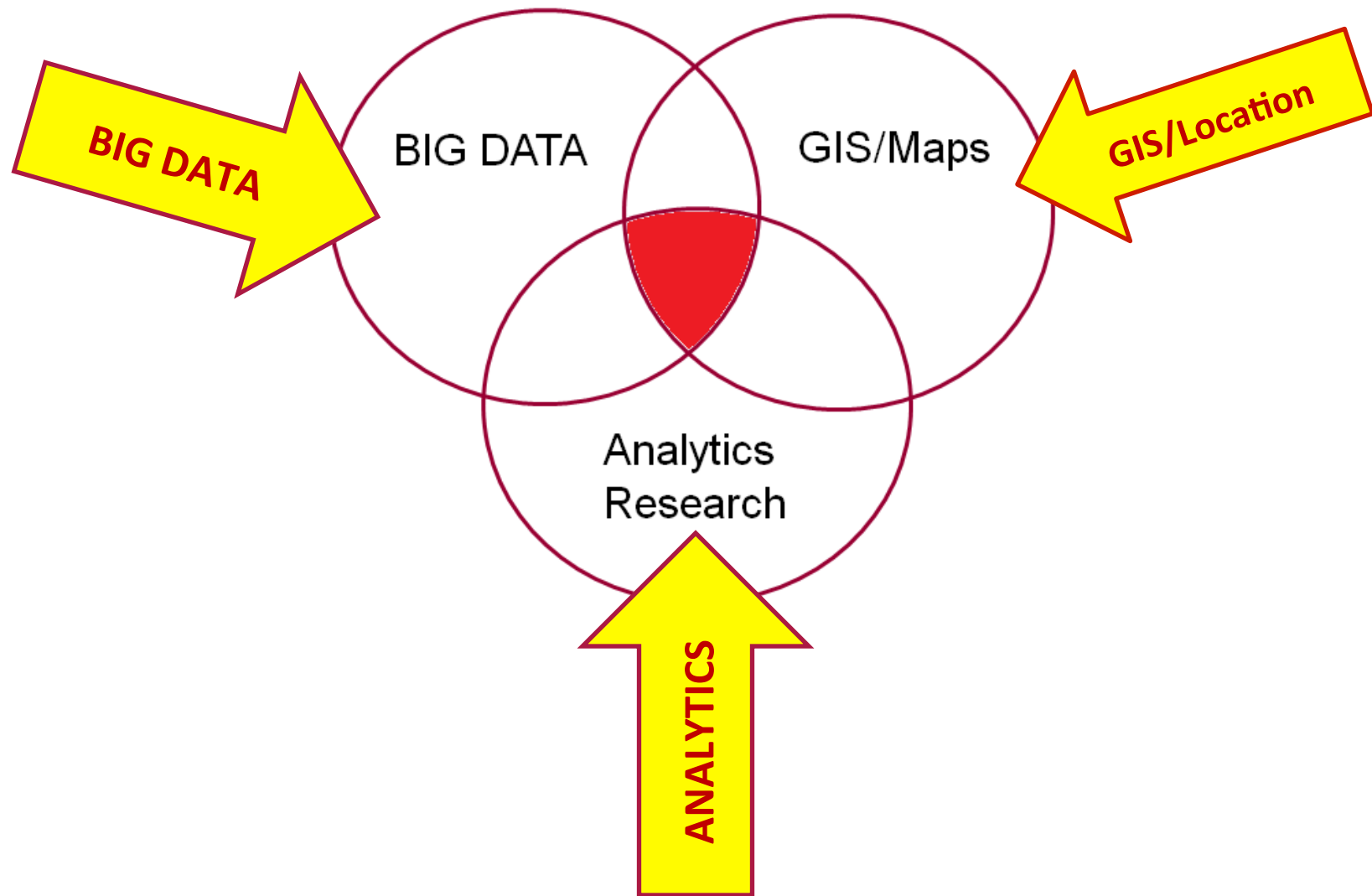
**Fogelman College of Business and Economics, University of Memphis  
Memphis, TN 38152-3120, USA**

***fernando.ferreira@esg.ipsantarem.pt* or *fernando.ferreira@memphis.edu***

**Ronald W. Spahr\***

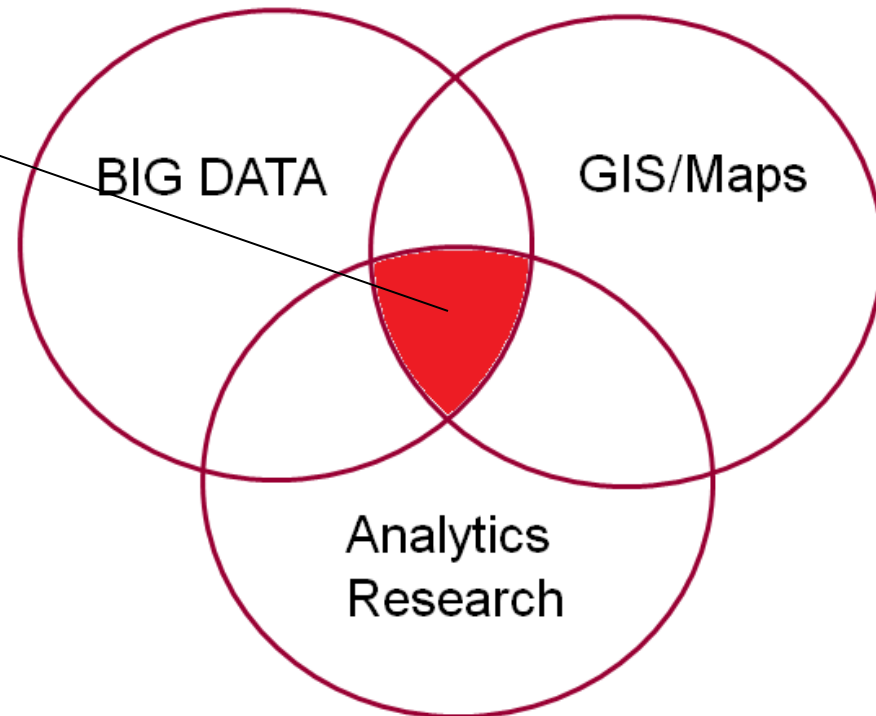
**Department of Finance, Insurance and Real Estate  
Fogelman College of Business and Economics, University of Memphis  
Memphis, TN 38152-3120, USA**

# Convergence of Trends



# Convergence of Trends

**The Science of Property  
Valuation**



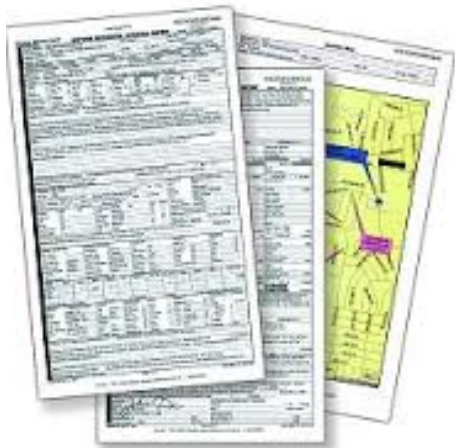


ART

SCIENCE

# Today...

Appraisers have ***powerful*** Form Fillers  
And a lot of manual work!





# Appraising is an “Art”



# Appraising is an “Art”



You would never expect a computer to value the Mona Lisa

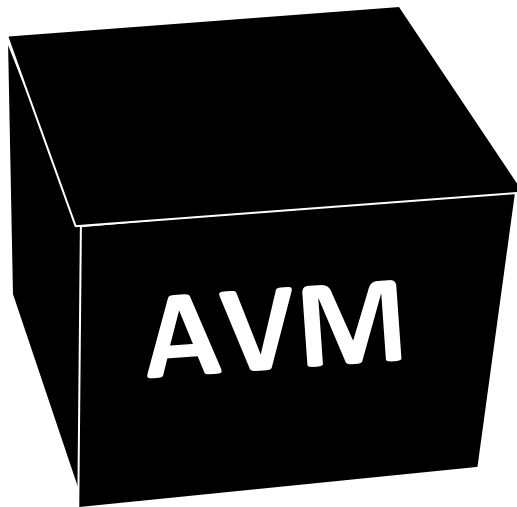
# Appraising is an “Art”



We also don't expect computers to accurately value our home

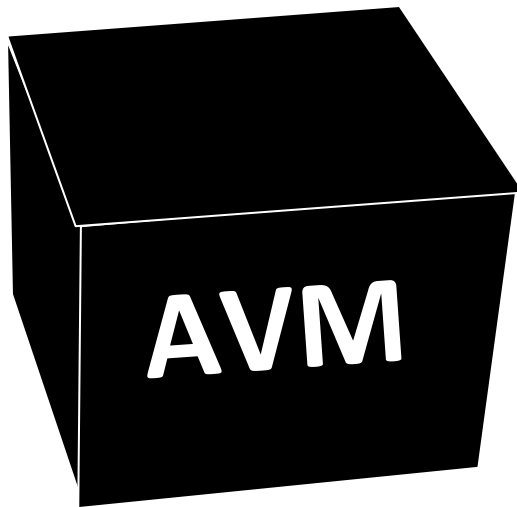
# But Ever Since 1981...

These Black Box property valuation systems have been getting better and better every year.



# But Ever Since 1981...

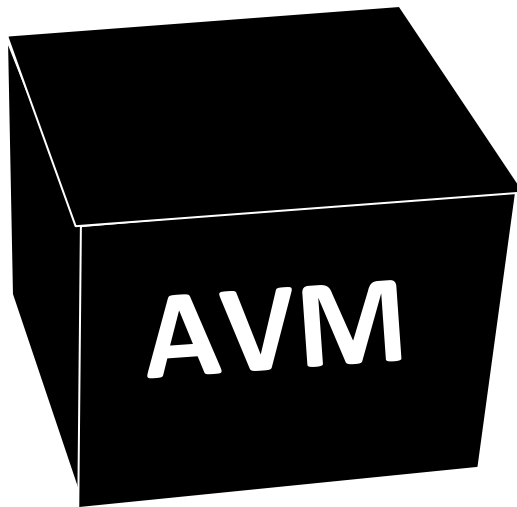
Their usage continues to grow





# But Ever Since 1981...

“Each month, we provide more than one billion **AVM values** to lenders, brokers, government agencies, marketing firms, consumers and insurance companies”.



# Today Valuation is BIG Business

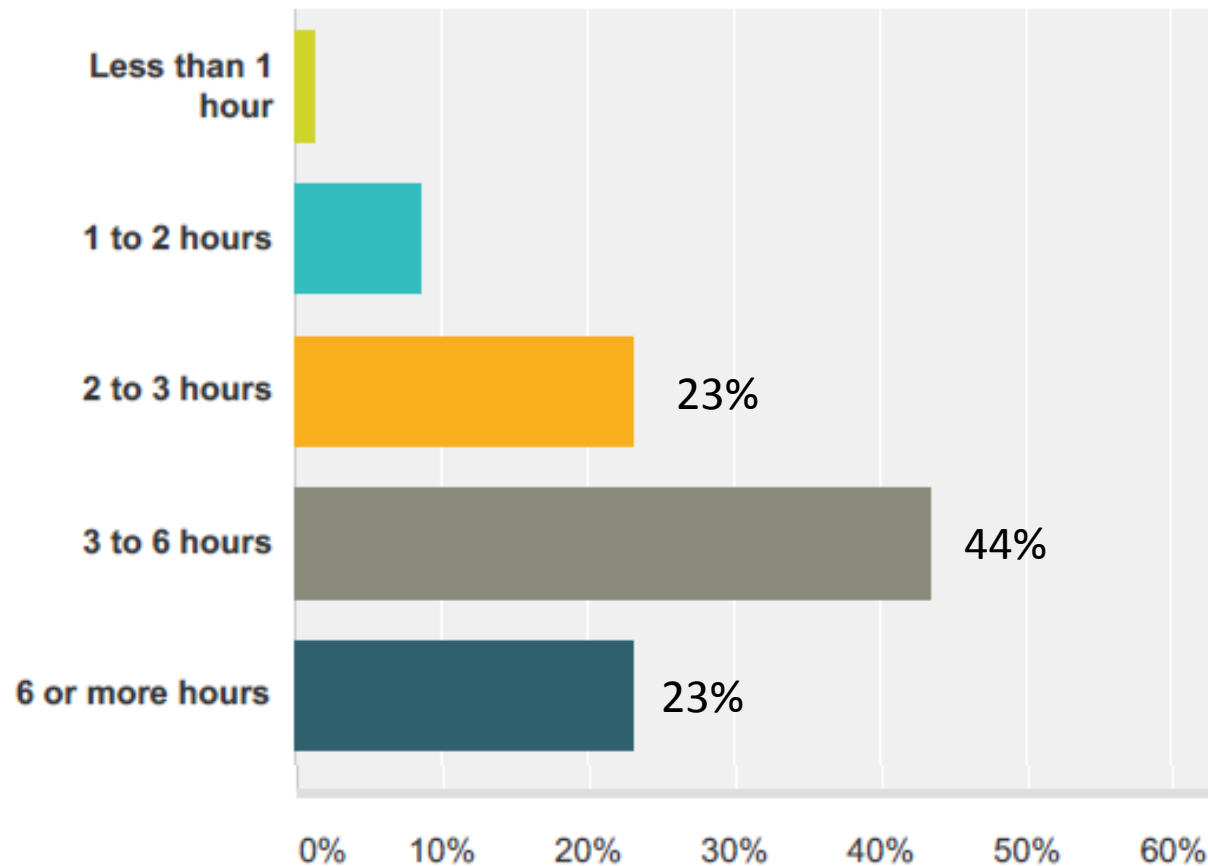
## **Property Valuation has become a Science**

- Team of more than 50 PhDs, economists, and modelers
- Combined with nation's largest property and ownership database covering 98 percent of the U.S. population

# Appraisers are at a Disadvantage



# Time to Complete an Appraisal



I typically spend **4 to 5 hours** on a report not including field work with research and analysis taking up most of the time

# Appraisal Quality



## Office of the Comptroller of the Currency

- 17.6 % of appraisals contained contradictory information
- 35% of repurchased loans are due to faulty appraisals

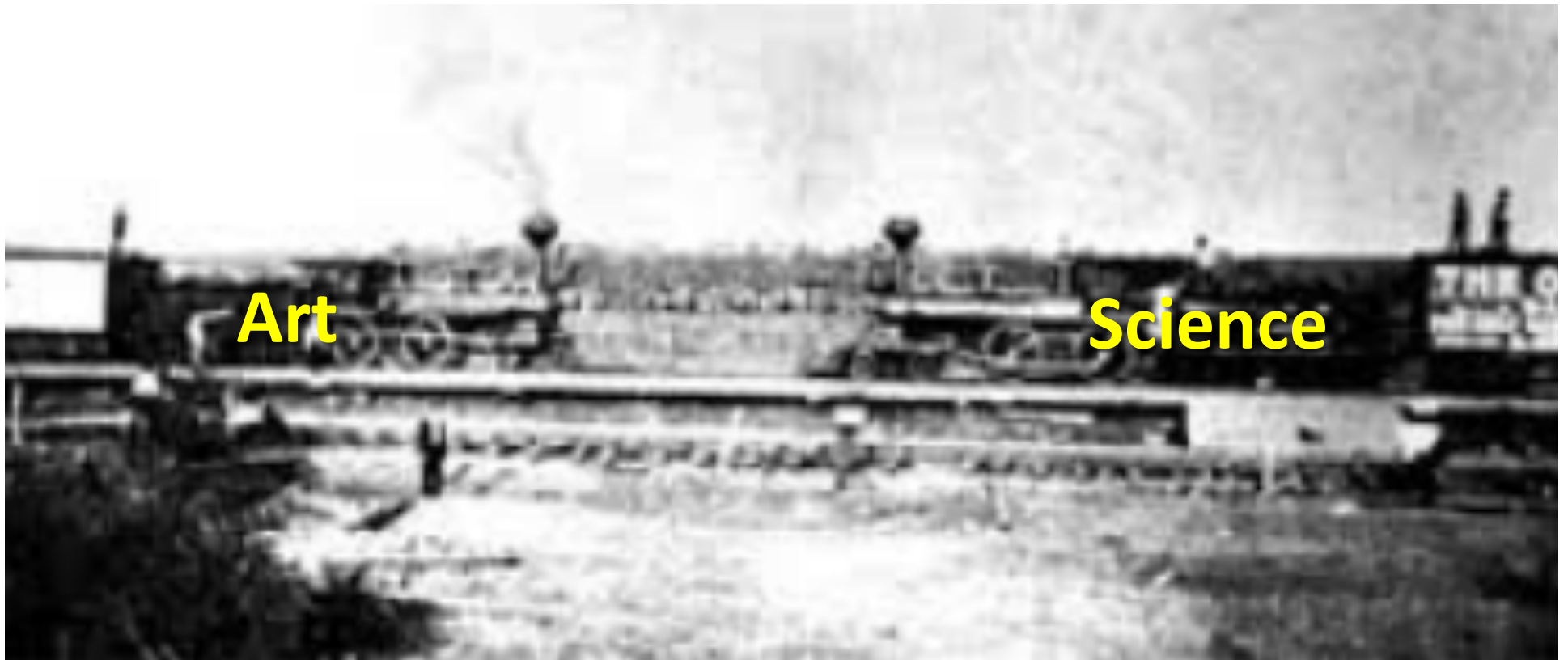


# Appraisal Compliance

- USPAP
- UCDP,UAD
- CFPB
- Dodd Frank
- Interagency Guidelines
- Federal & State Independence Laws



On January 26th



# On January 26th



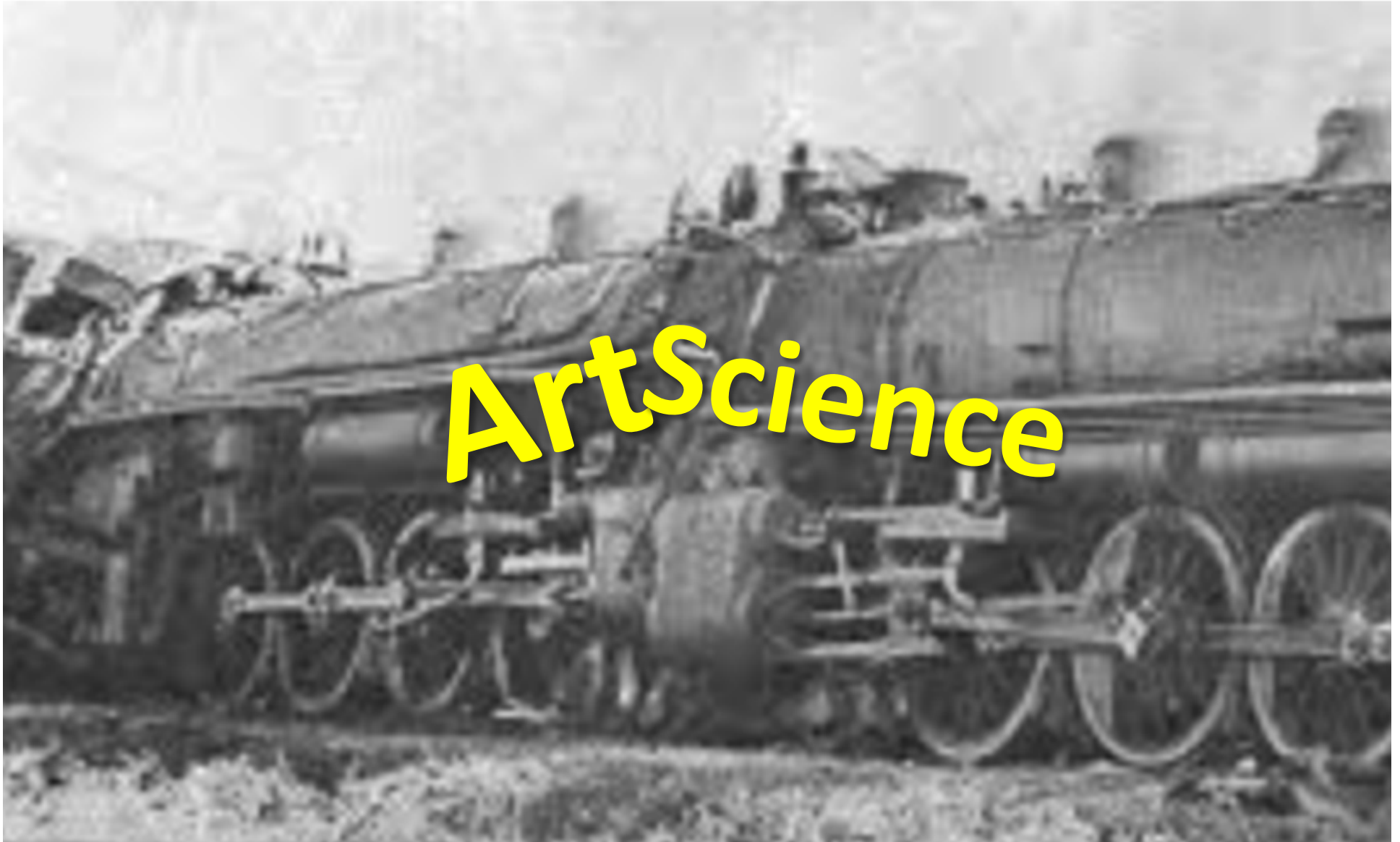
The image cannot be displayed. Your computer may not have enough memory to open the image, or the image may have been corrupted. Restart your computer, and then open the file again. If the red x still appears, you may have to delete the image and then insert it again.

**Art Science**

On January 26th



On January 26th



On January 26th



Collateral Underwriter takes  
appraisal review to the next level



# Why Collateral Underwrite

The following slides are from Fannie Mae's **Lender Letter LL-2015-02**. This is copyrighted information owned by Fannie Mae.

CU is a proprietary model-driven tool developed by Fannie Mae that provides an automated appraisal risk assessment to support proactive management of appraisal quality. As previously announced, Fannie Mae is making CU available to Fannie Mae-approved lenders in 2015 to provide transparency and to help lenders more effectively and efficiently identify potential issues with appraisals.

# Collateral Underwriter Facts

- The use of CU is voluntary and at no cost to the lender.
- CU is a Fannie Mae (only) risk management tool.
- CU does not make a credit decision and the lender may not use CU to make a credit decision.
- CU does not accept or reject appraisal reports or characterize an appraisal as “good” or “bad.” The CU risk score and messages pertain to risk and identify potential defects in the appraisal report. The lender is not obligated to “clear” or “override” the CU messages. The messages are meant to be used as red flag messages that lenders should use to assist with their appraisal analysis and inform their decisions based on a complete analysis and understanding of the appraisal report.
- CU does not provide an estimate of value to the lender.
- CU provides a numerical risk score from 1.0 to 5.0, with 1 indicating the lowest risk and 5 indicating the highest risk. Risk flags and messages identify risk factors and specific aspects of the appraisal that may require further attention.

# Adjustments to Comparable Sales

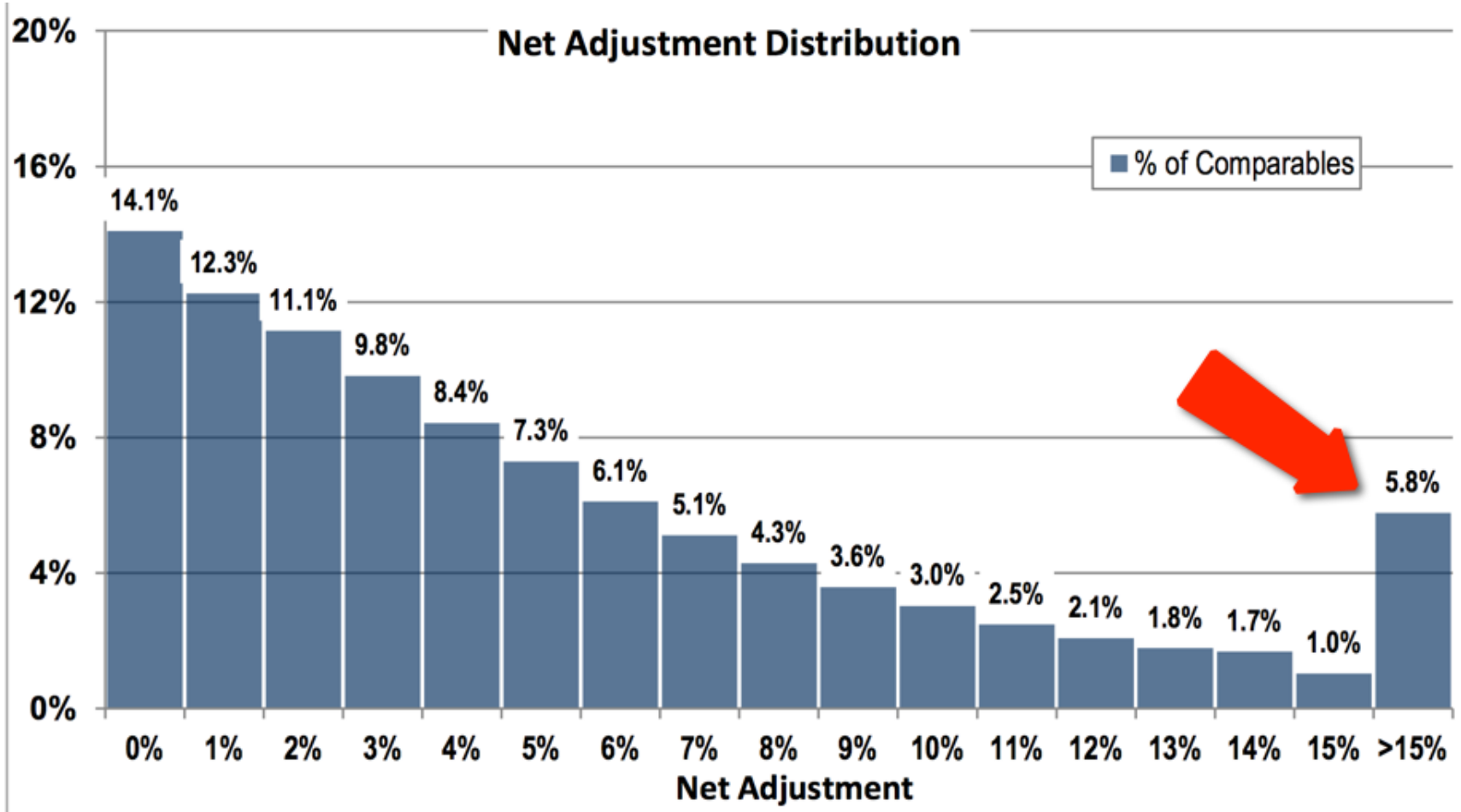
In the December, 2014 *Selling Guide* update, Fannie Mae removed a long-standing guideline that when adjustments to the comparable sales exceeded 15% net and 25% gross, the appraiser was required to provide an explanation as to why the comparable was chosen for use in the appraisal report. This requirement for commentary was based on the premise that the best comparable would require the fewest adjustments.

To support the decision-making process to remove this guideline, Fannie Mae analyzed 700,000 appraisals submitted to Fannie Mae in Q1 2014, including analysis of more than 2.5 million comparable sales. The charts below reflect the results of the analysis.

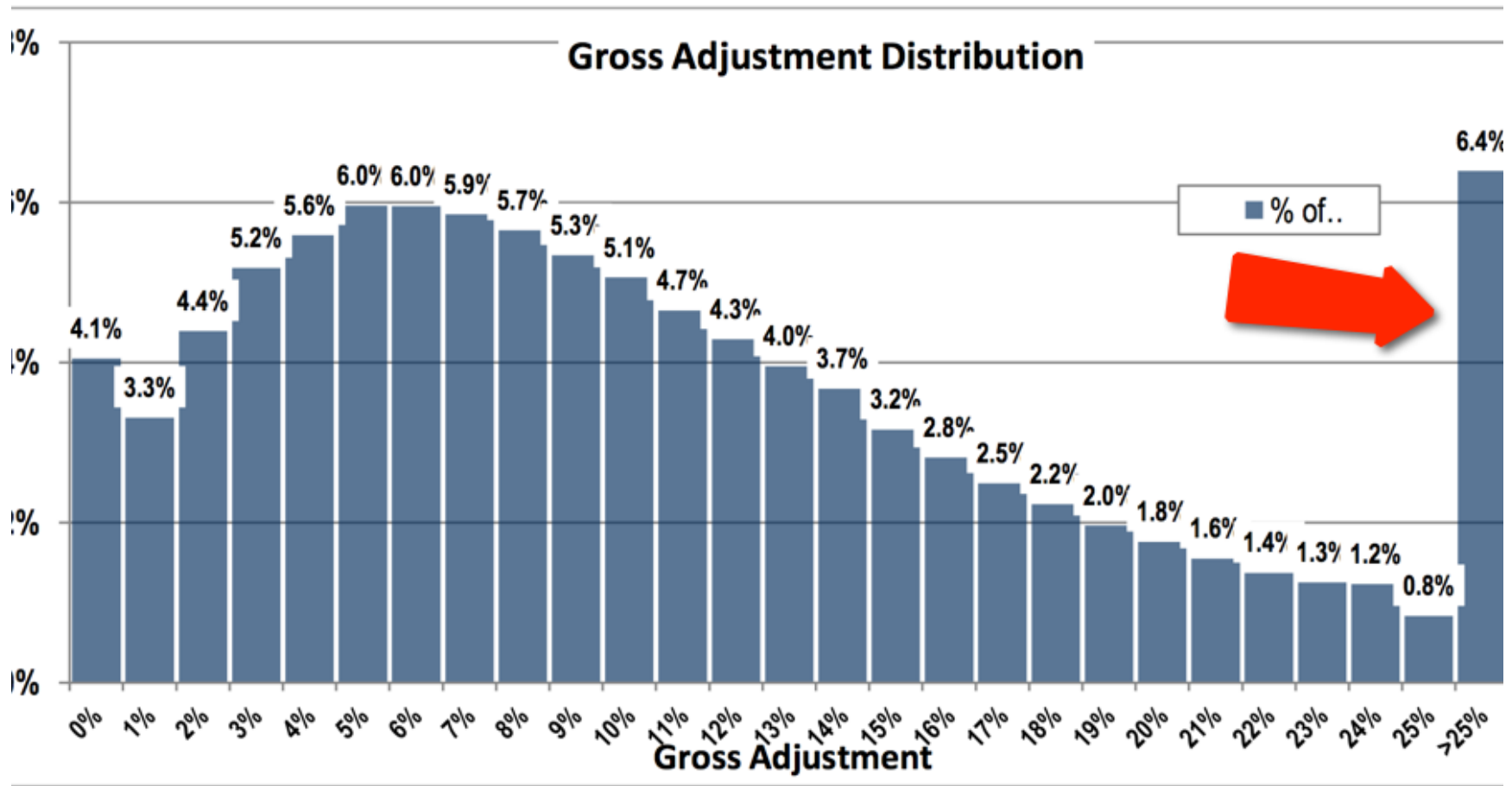
# Adjustments to Comparable Sales

- Fannie Mae no longer requires specific comments from an appraiser if a comparable sale is older than 6 months; however, a comment is still required when a comparable sale is older than 12 months.
- Older comparable sales (including sales older than 12 months) that are the best indicator of value for the subject property can be used if appropriate. For example, if the subject property is located in a rural area that has minimal sales activity, the appraiser may not be able to locate 3 truly comparable sales that sold in the past 12 months. In this case, the appraiser may use older comparable sales as long as he or she explains why they are being used.

# 94.2% comps had net adjustments less than 15%

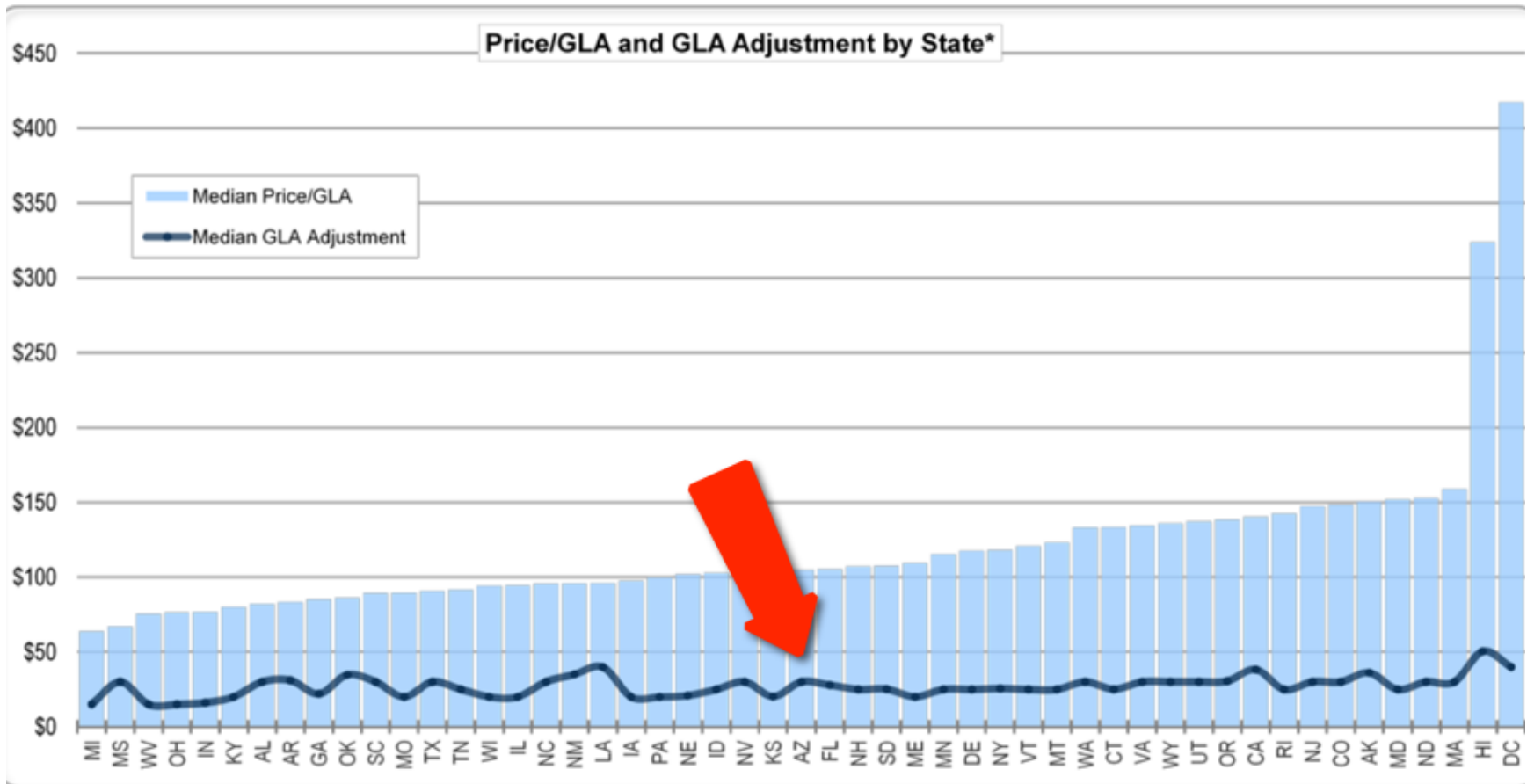


# 93.6% comps had gross adjustments less than 25%



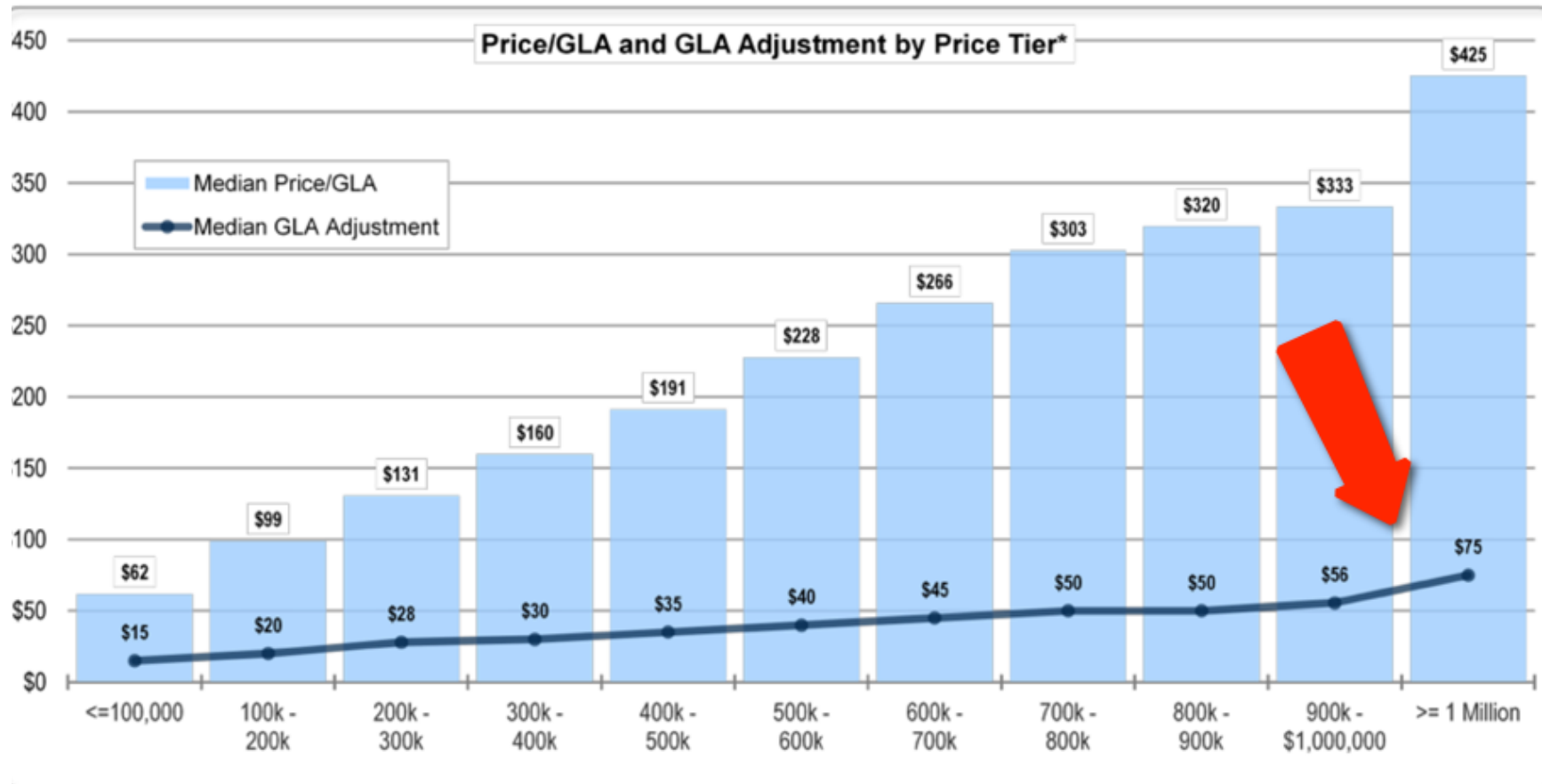


Analysis shows little variation in the median GLA adjustment despite significant variation in price



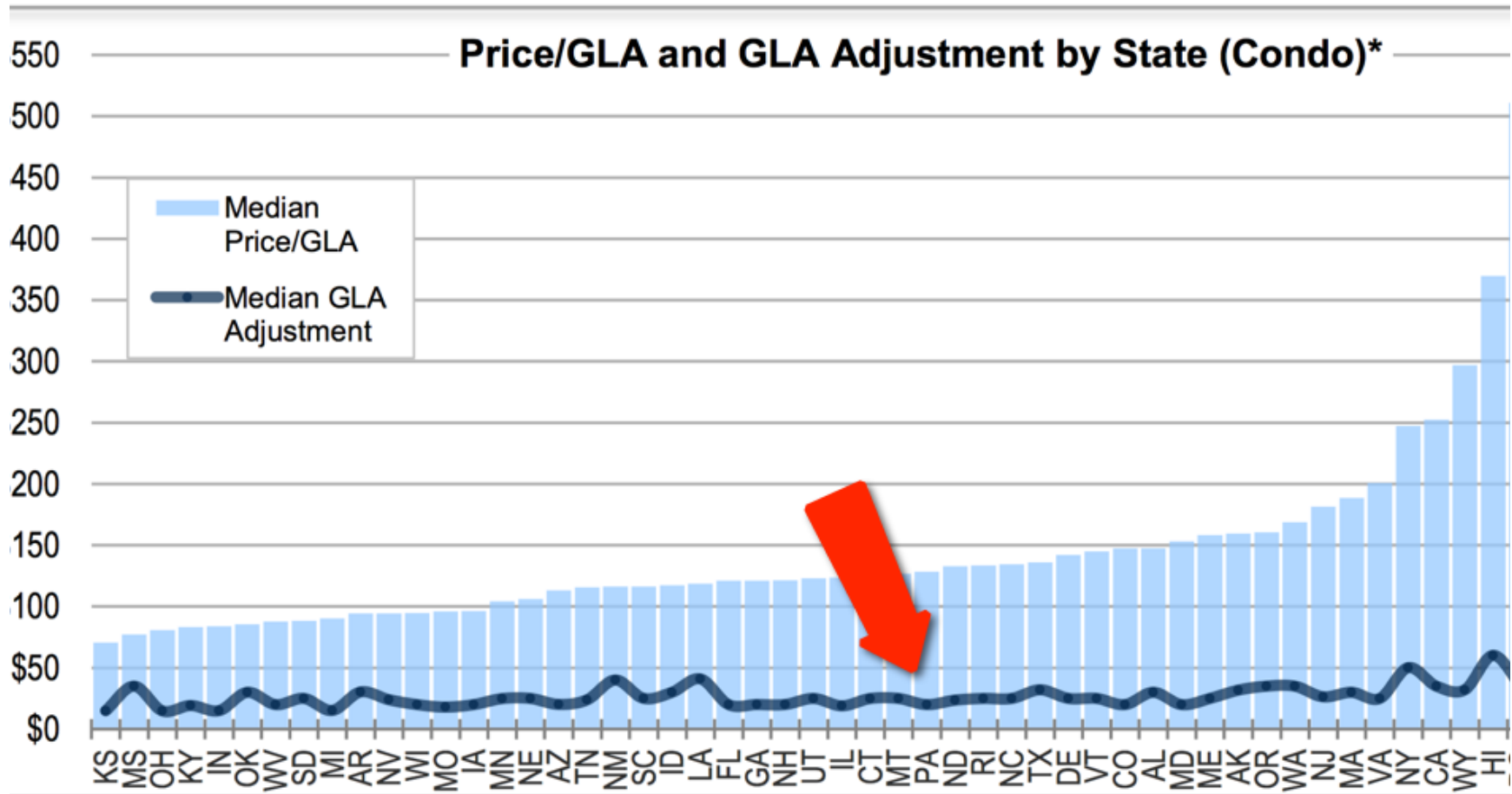
\* Analysis based on over 700,000 appraisal submissions to UCDP in 2014 Q1

# GLA adjustments remain much the same

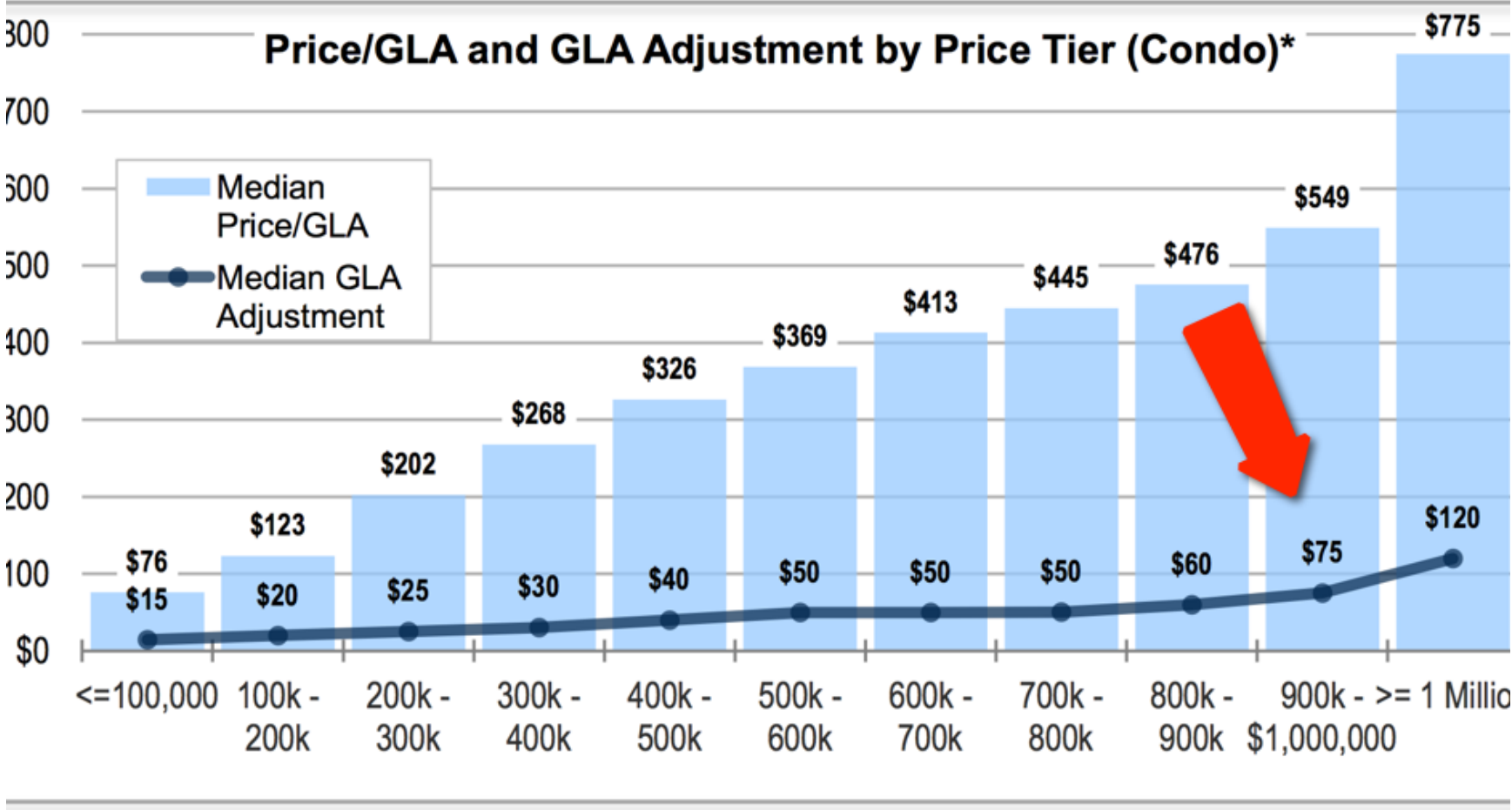


Analysis based on over 700,000 appraisal submissions to UCDP in 2014 Q1

Appraiser behavior appears to be the same when the analysis is limited to condominiums



This trend is even more pronounced in an analysis of condominiums by price tier.



# Appraisal Quality Monitoring

Fannie Mae's AQM process identifies appraisers whose appraisal reports exhibit a pattern of minor inconsistencies, inaccuracies, or data anomalies. The intent and expectation of communicating these issues to appraisers is for training and educational purposes, and to provide them with an opportunity to improve their work. Future appraisal reports from those appraisers are then monitored to assess improvement.

The AQM process can also identify appraisers whose appraisal reports exhibit more egregious issues. In those cases, Fannie Mae will contact the appraiser and the lender that delivered the loan(s), informing them that either 100% of the loans submitted with appraisals from the identified appraiser will be reviewed in the post-purchase file review process, or that Fannie Mae will no longer accept loans with appraisals completed by the specific appraiser.

# Your World Changed on the 26th

In addition to Property Eligibility and Policy Compliance, CU analyzes key appraisal components including data integrity, comp selection, adjustments, and reconciliation.

**COLLATERAL UNDERWRITER RISK SCORE [1.0 – 5.0]**  
(1000 Series)

**APPRAISAL QUALITY FLAG [Y/Null]**  
(1000 Series)

**OVERVALUATION FLAG [Y/Null]**  
(1000 Series)

**ELIGIBILITY/COMPLIANCE FLAG [Y/Null]**  
(1000 Series)

DATA INTEGRITY MESSAGES  
(400 Series)

COMP SELECTION MESSAGES  
(700 Series)

FATAL UAD EDITS  
(Existing)

PROPRIETARY MESSAGES  
(Existing)

MODEL FAILURE MESSAGES (900 Series)

ADJUSTMENT MESSAGES  
(600 Series)

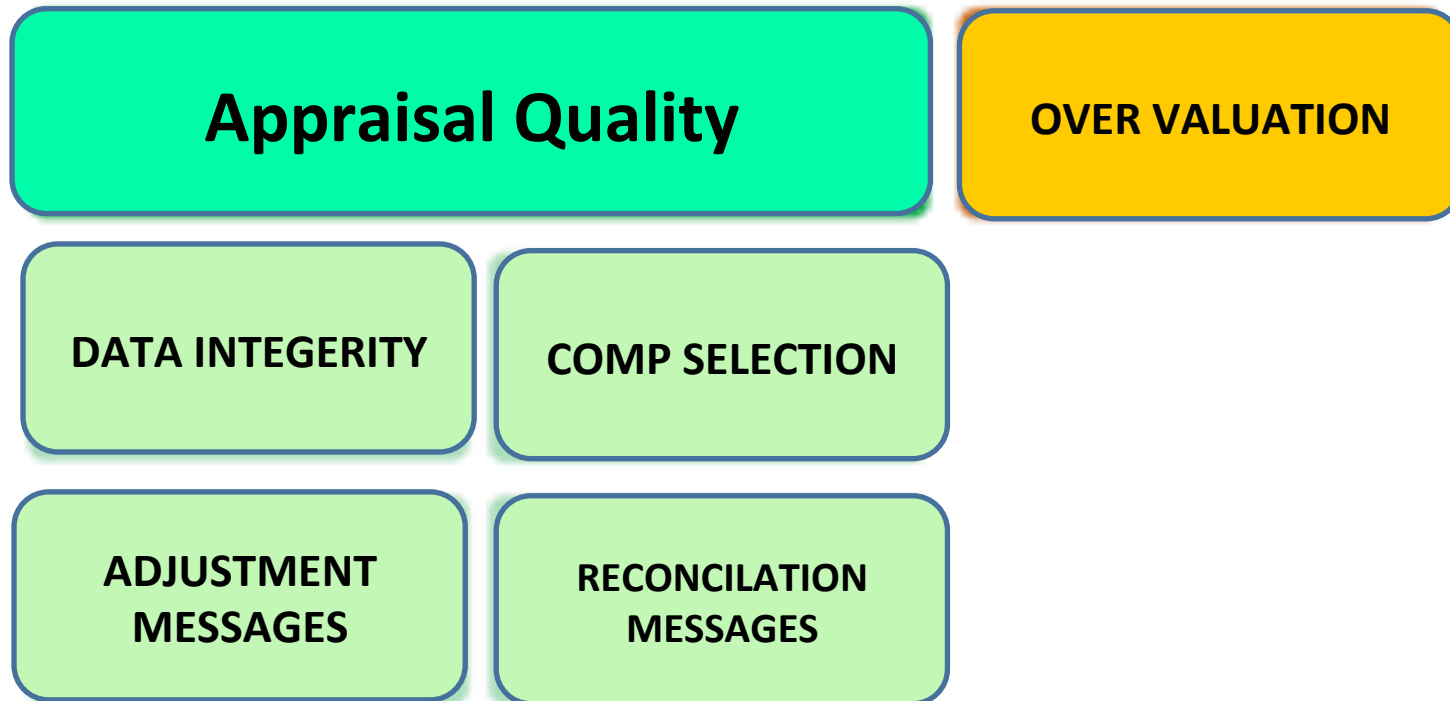
RECONCILIATION MESSAGES  
(500 Series)

CU DATA QUALITY MESSAGES  
(800 Series)

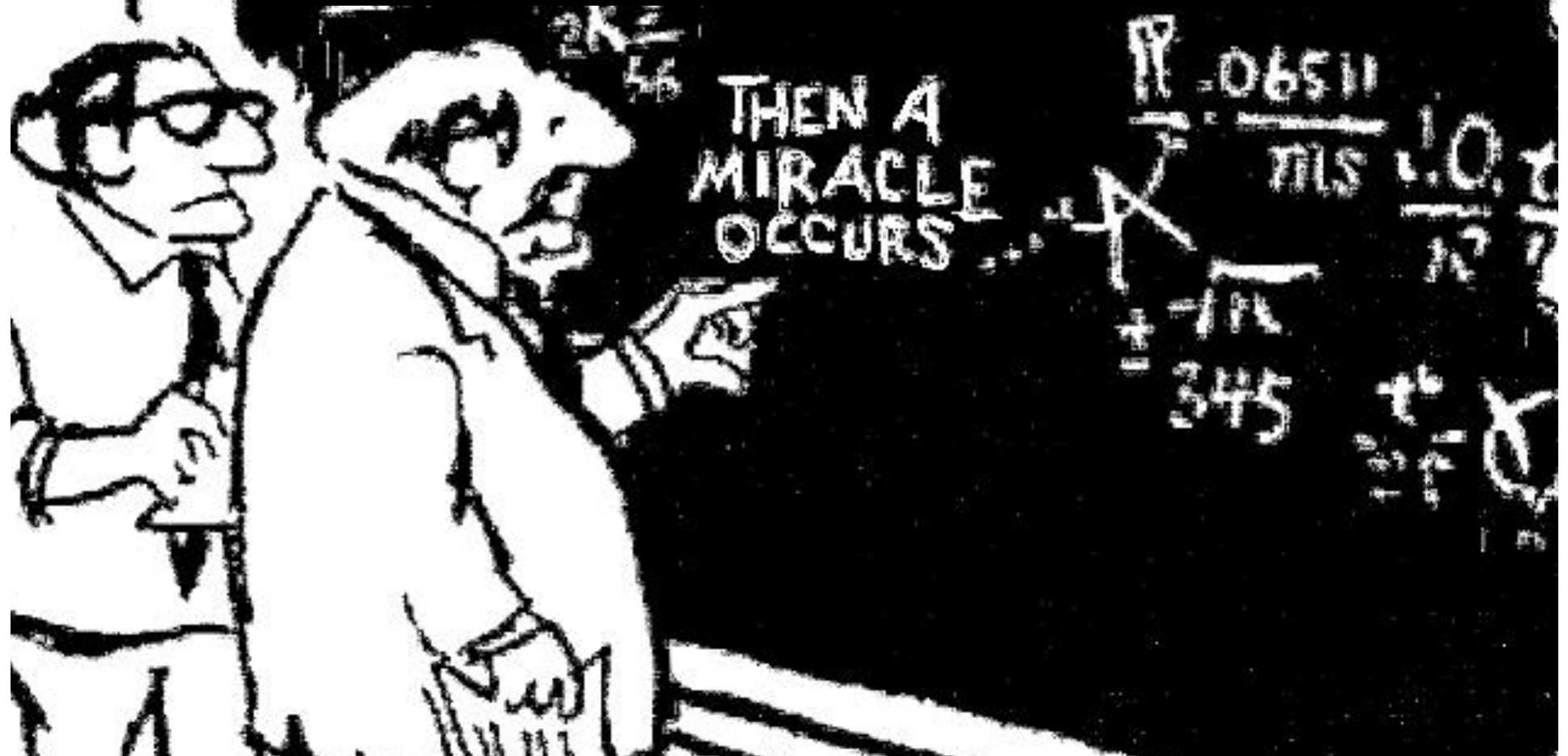
Scores and risk flags may facilitate more efficient allocation of resources by the lender. Detailed messaging directs reviewers/underwriters to specific aspects of the appraisal that may require further attention.



# Your World Changed on January 26th



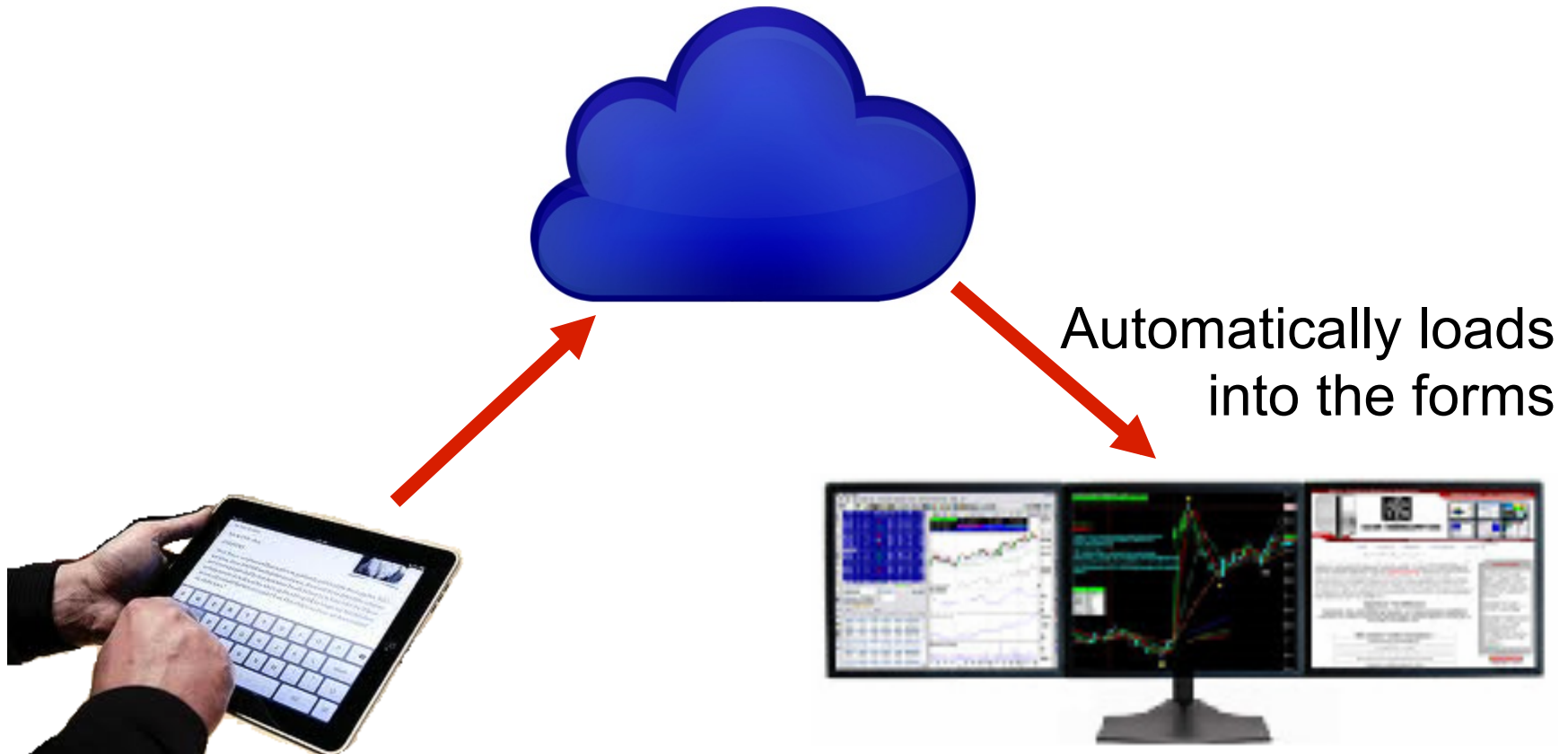
# HOW DO WE COMPETE?



# Is Mobile Computing the Answer?

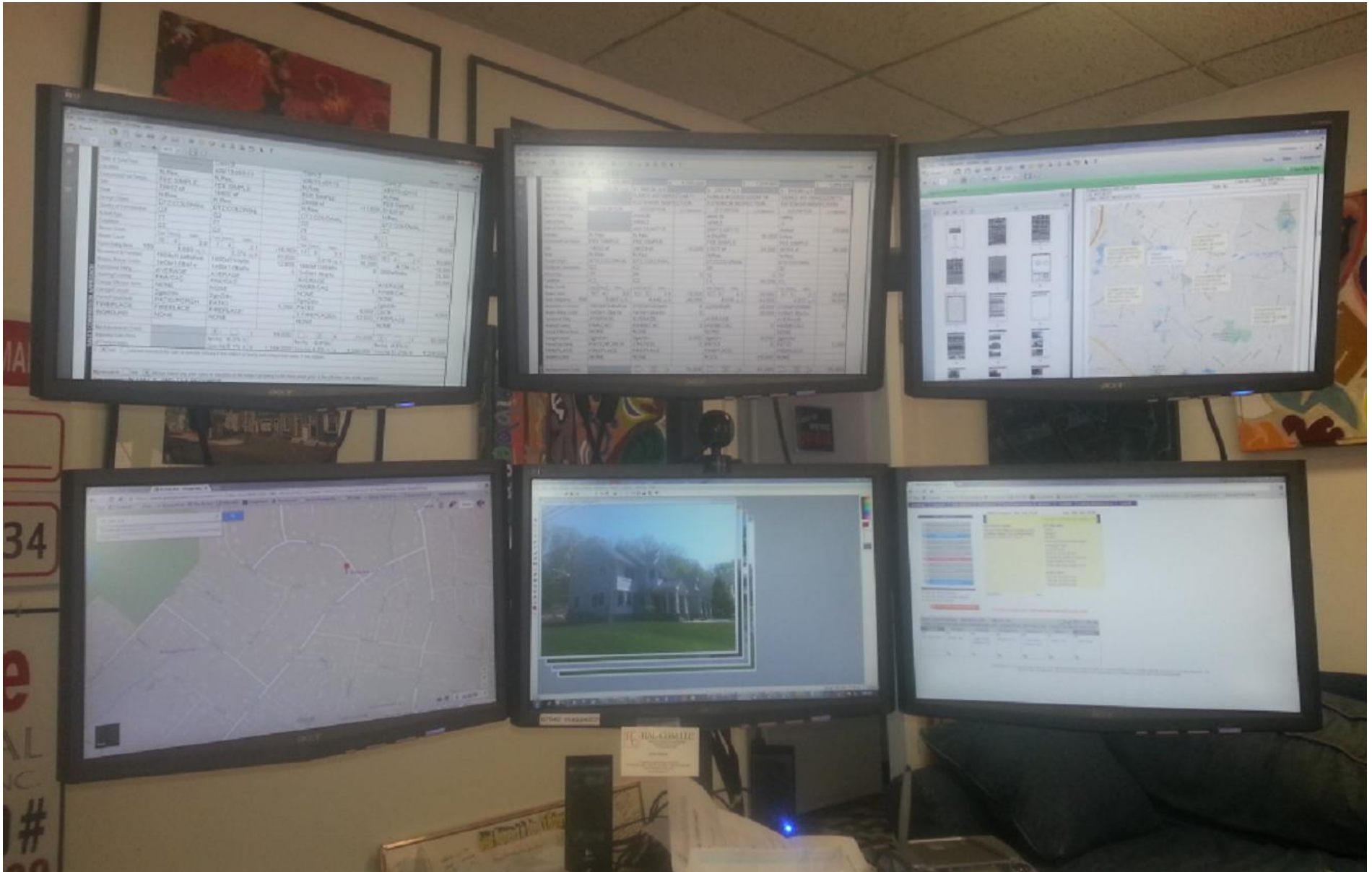


# More Efficient Inspections





# See More, Do More - Quicker





# Partner with an AVM?

**AVMs: Hop on board or get left behind?**

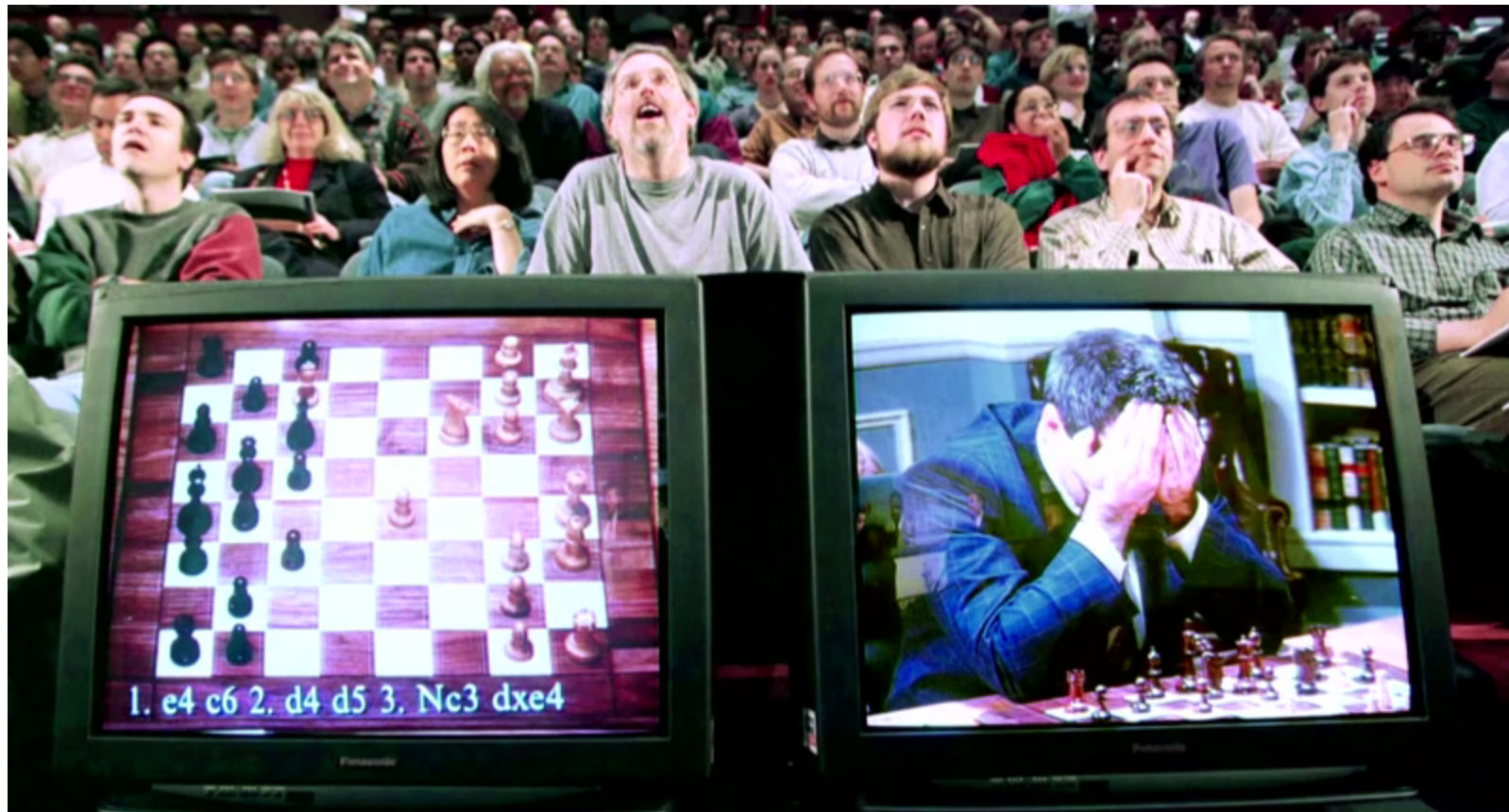


# Artificial Intelligence Black Boxes

**AVM**



# Artificial Intelligence





# Artificial vs Augmented Intelligence



Computer

VS



Computer



+



Computer directed



+



Human directed

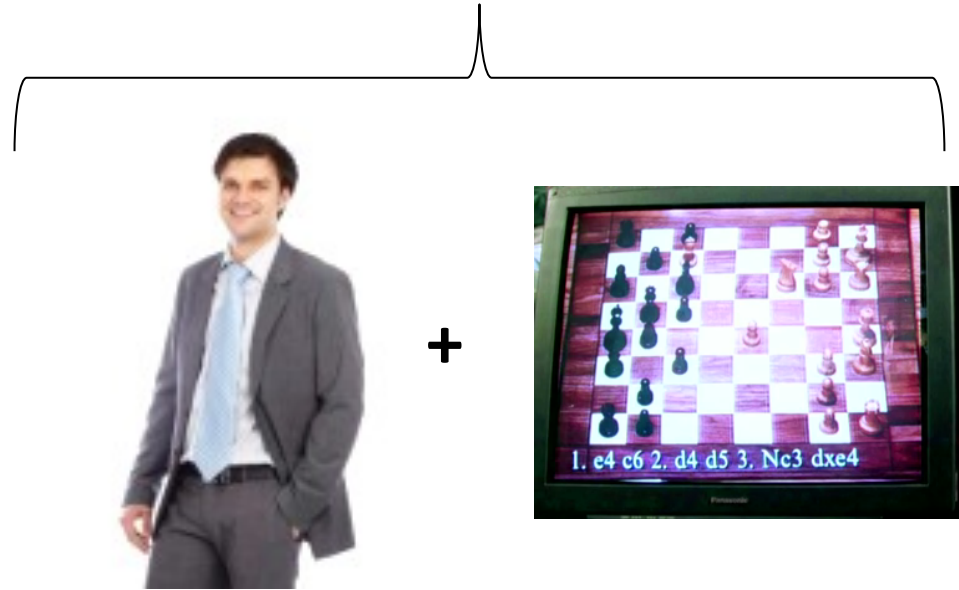
# Artificial vs Augmented Intelligence

**The Winner**



Computer

**VS**



Human directed Strategy

# Computer-Aided Appraising

The Winner



Computer

VS



+



Appraiser directed Analysis



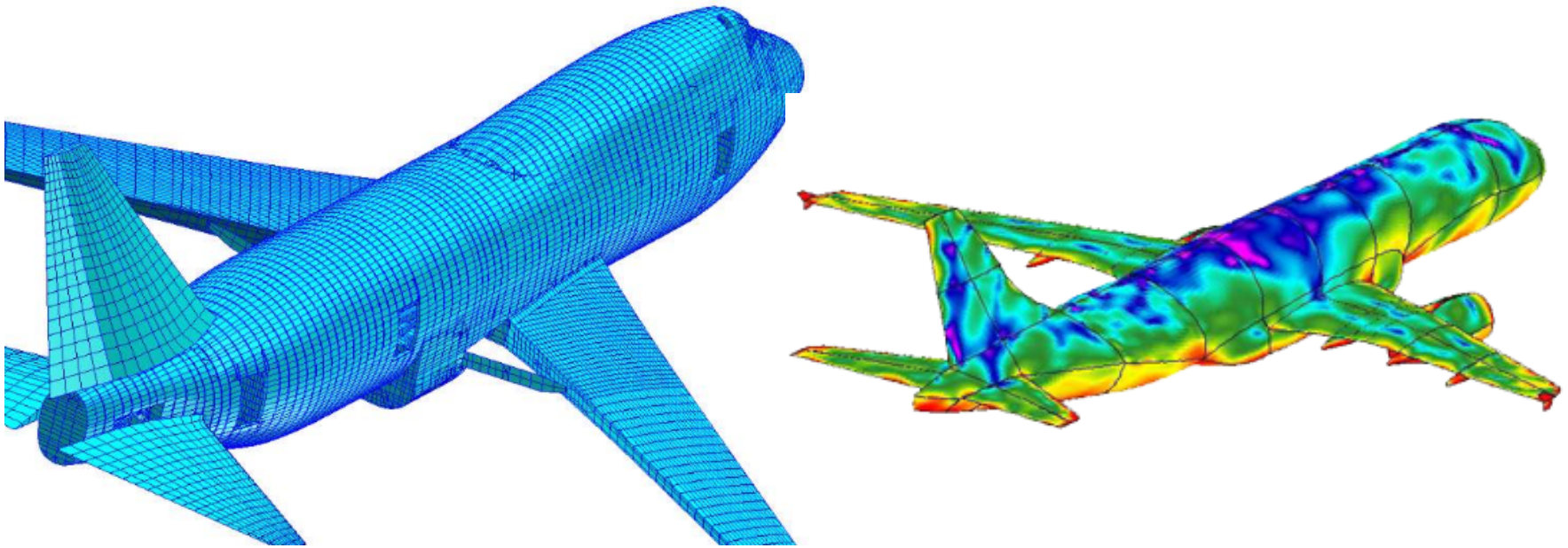
The answer is...



Put Computers to Work for Appraisers

# Computer-Aided Engineering

**Helped engineers solve problems that  
were previously unsolvable**



# Computer-Aided Design

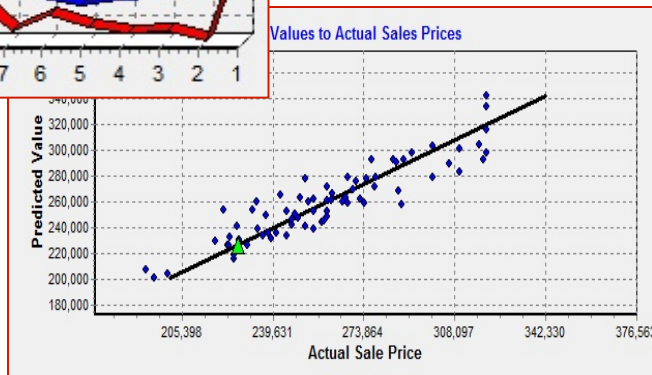
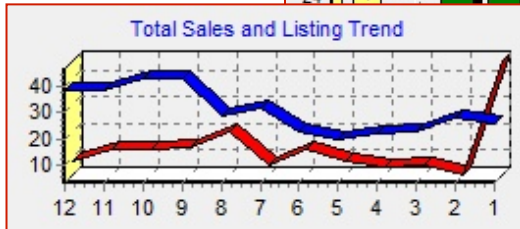
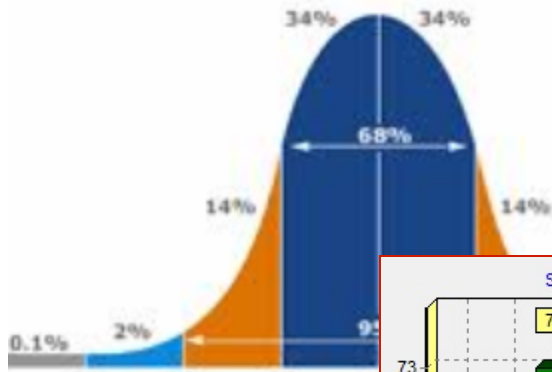
**Helped architects design structures that were previously not buildable**





# Computer-Aided Appraising

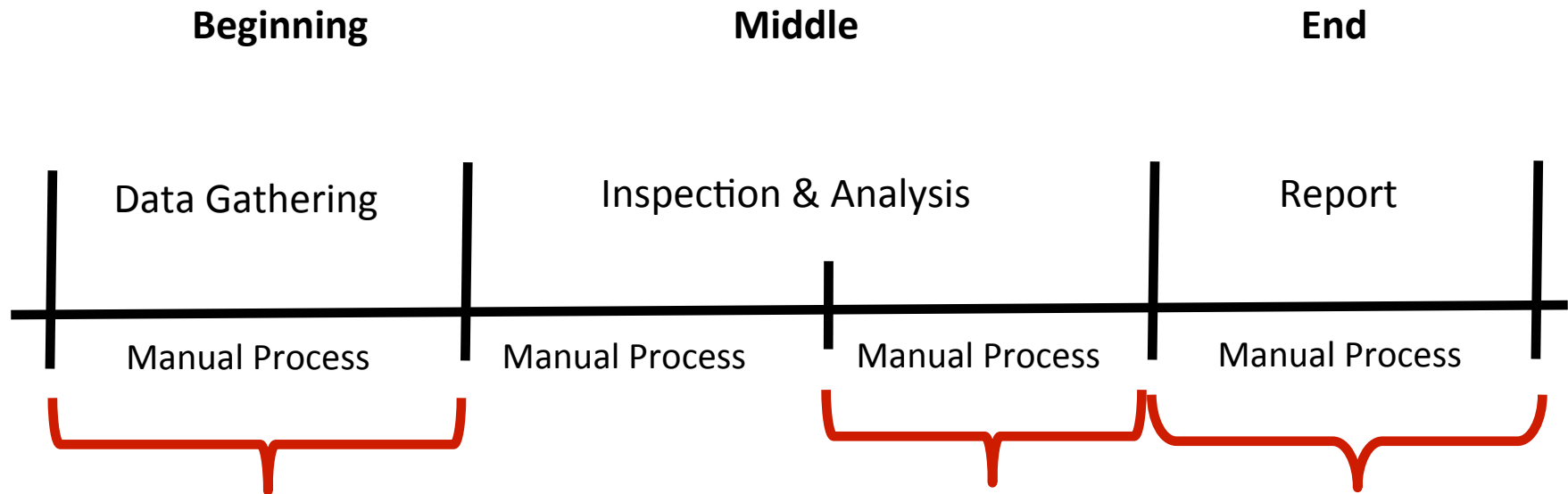
Add “Science” to the “Art”



+



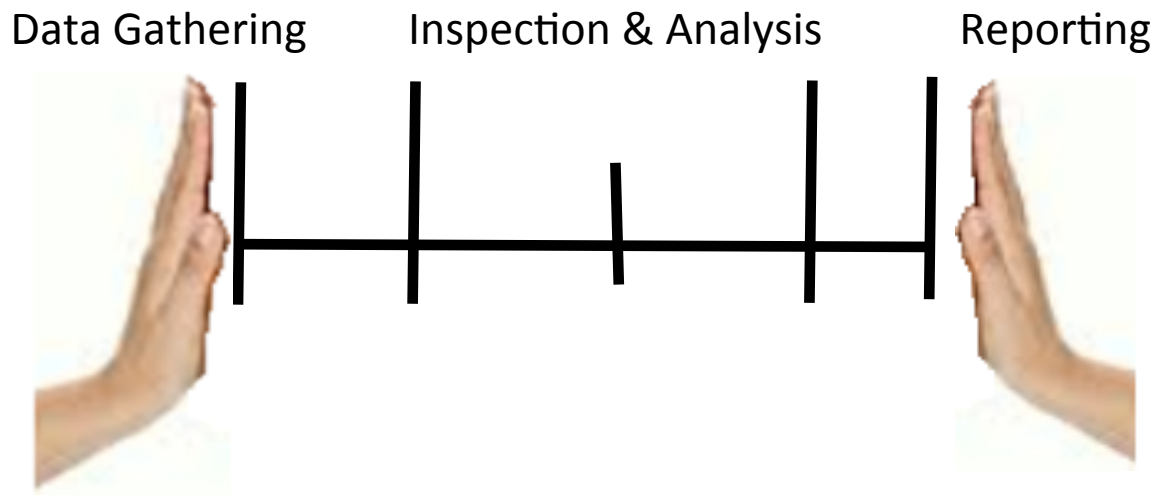
# Typical Appraisal Process



4- 6 Hours + Inspection = 1 Day

# Computer-Aided Appraising

Shortens the Entire Valuation Process





# Instead of Form Filling...



# Focus on the Analysis

Sales Comparable Selection and Ranking

Total Properties Considered: 327    Total Sales Remaining: 47  
 Total Properties Excluded: 280

Adjustments    Save    Cancel

Comp Ranking    Property Details    Preferences

Comparable Sales    Property Details and Adjustments

Include	Comp#	Rank	Address	Prox	Sale Price	Adj Sale Pr
<input checked="" type="checkbox"/>	10	575	1816 CONSTITUTION CT	1.557	1100000	1422370
<input checked="" type="checkbox"/>	22	493	2178 CONSTITUTION DR	1.597	1070000	1350279
<input checked="" type="checkbox"/>	29	471	2340 MONACO DR	1.278	795000	1058497
<input checked="" type="checkbox"/>	41	422	2331 WESTMORELAND DR	1.351	955000	1190657
<input checked="" type="checkbox"/>	44	377	4712 TORREY PINES CI	1.131	860000	1264569
<input checked="" type="checkbox"/>	42	393	2062 PASEO DEL ORO	0.757	774000	1139356
<input checked="" type="checkbox"/>	35	448	4067 HALKINS DR	1.289	880000	1194756
<input checked="" type="checkbox"/>	45	339	2041 PASEO DEL SOL	0.763	890000	1200146
<input checked="" type="checkbox"/>	39	424	2269 SAMARITAN DR	1.179	902500	1309263
<input checked="" type="checkbox"/>	32	467	3997 STARVIEW DR	1.363	976000	1244986
<input checked="" type="checkbox"/>	1	689	14769 BERRY WAY	0.431	1399750	1443332
<input checked="" type="checkbox"/>	34	452	2207 MAYKIRK RD	1.6	1030000	1215636
<input checked="" type="checkbox"/>	36	443	2147 PASEO DEL ORO	0.736	1090000	1322259
<input checked="" type="checkbox"/>	9	580	15341 CHARMERAN AV	0.843	954295	1109872
<input checked="" type="checkbox"/>	30	470	1894 DRY CREEK RD	1.437	1450000	1382144
<input checked="" type="checkbox"/>	7	598	2418 NEW JERSEY AV	1.127	1300000	1469795
<input checked="" type="checkbox"/>	28	482	MYSTIC DR	1.091	1030000	1102854
<input checked="" type="checkbox"/>	2	657	14904 LEIGH AV	0.604	1280000	1285060
<input checked="" type="checkbox"/>	8	583	14721 CHARMERAN AVE	0.298	1750000	1701137
<input checked="" type="checkbox"/>	24	491	14908 CONWAY CT	0.751	963500	853978
<input checked="" type="checkbox"/>	16	517	15133 COOPER AV	1.206	1600000	1487660

Bracketing    Adjustments

Bracket Subject

Sale Price    1    Weight    5    Threshold    0

Contract Price     Regression Value    1344292     Other Value

GLA        200

Site Area        500

Bsmt Area        0

Bed Rms        2

Bath Rms        2

Age        2

Cars        2

FirePlace        2

Pool        2

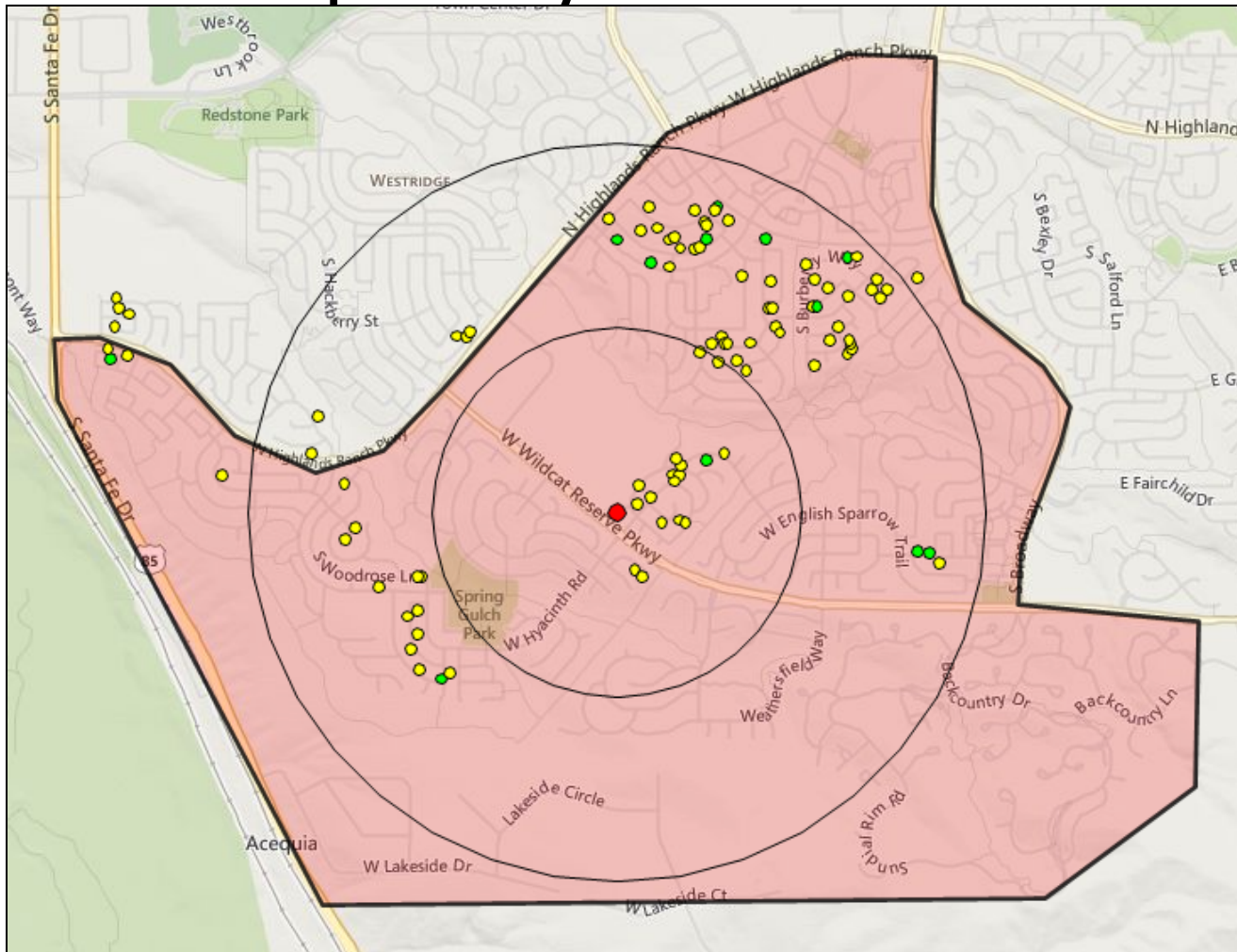
14904 LEIGH AV    Subject View

Easy to show. Please call listing agent to set up an appointment. 408-827-4927 or cell 408-832-2323. Seller needs rent back. Oster Elementary (API 925), Dartmouth Middle (911), Leigh HS (819), Terrific & Immaculate Property both Inside & Out. Remodeled kitchen w/ Cherry Cabinets, Granite Counters, Island & Breakfast Bar is open to a Beautiful Family Room. Grand Master Suite w/ private deck & extra spacious bathroom & walk-closet. Massive & beautiful backyard! Separate office. Huge Lawn. Beautiful new hardwood floors. Downstairs Bedroom Suite. Separate Living Room & Dining Rooms



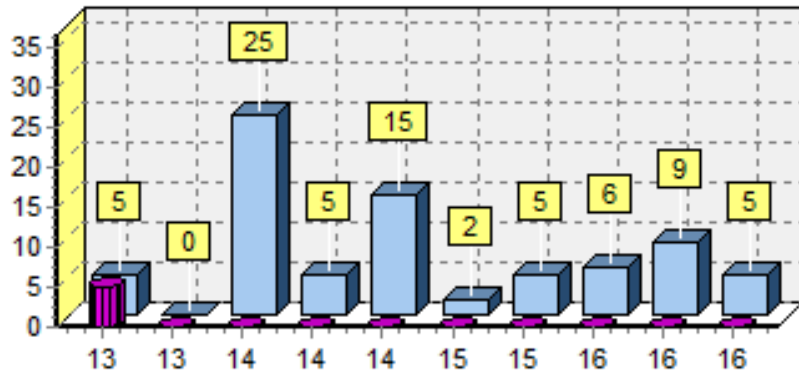
Adjustment Support using Regression  
 Comparables Ranking / Commentary  
 Overvaluation Risk Indicator  
 Automatic 1004MC Generation

# Geo-Spatially Define Markets

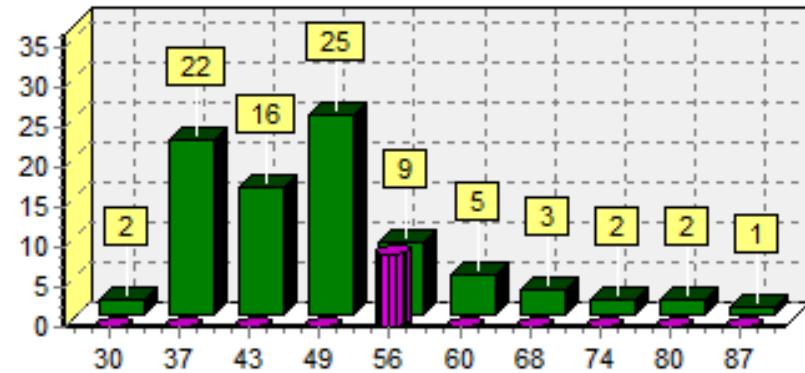


# Easily Calculate Market Features

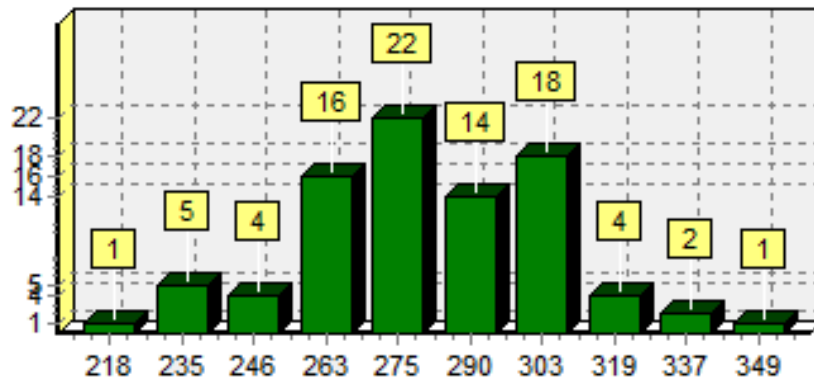
Gross Living Area Distribution (00s)



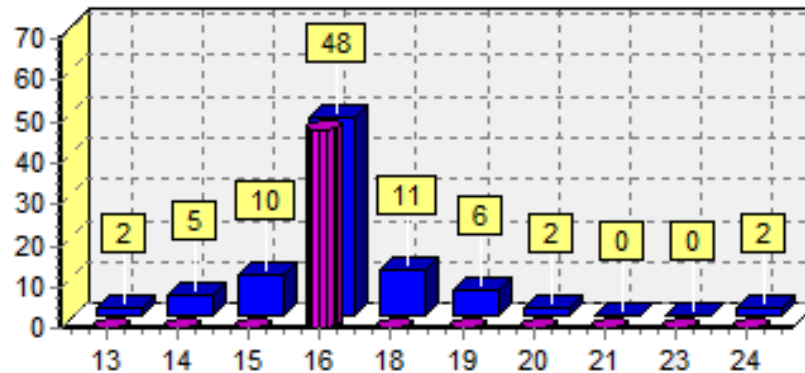
Site Area Distribution (00s)



Sale Price Distribution (000s)

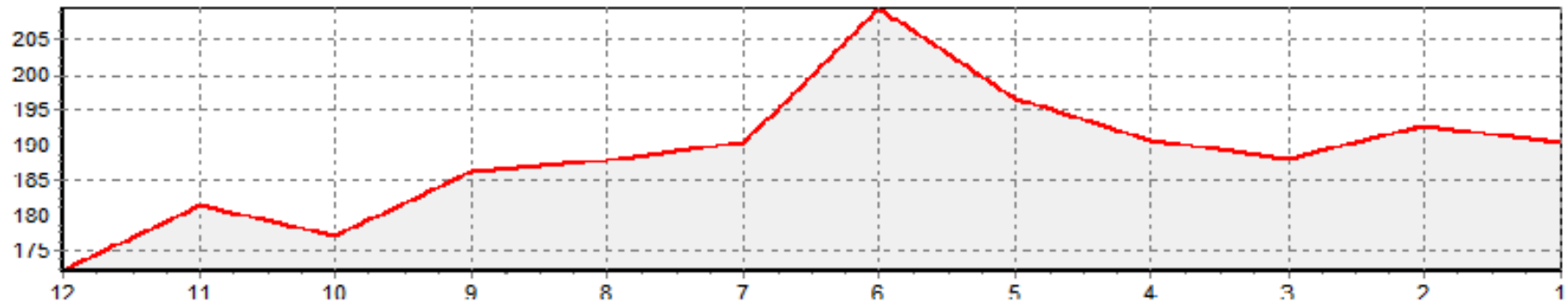


Age Distribution (yrs)

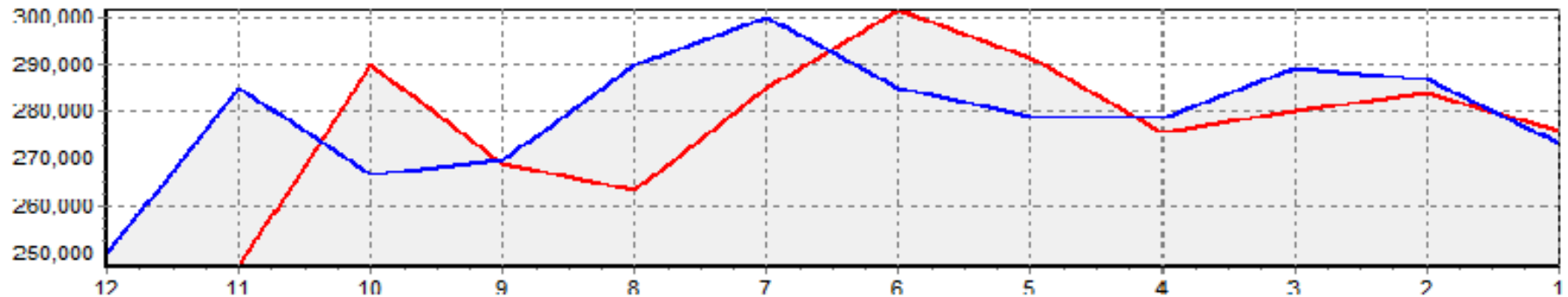


# Quickly Calculate Market Trends

Sales Price/Sqft



Sales and Listing Price Trend





# Analytically Support Comp Selection

Characteristic	Include	Low	Importance	High	Min	Subject	Max	Reset	Apply	Use Defaults
Proximity	<input checked="" type="checkbox"/>						1.476 miles			
Date of Sale	<input checked="" type="checkbox"/>				0					
Grs Liv Area	<input checked="" type="checkbox"/>				12		400 +/- sqft			
Bsmt Area	<input checked="" type="checkbox"/>				0	1404 sqft	1450 +/- sqft			
Site Area	<input checked="" type="checkbox"/>				3049	5,619	8712 sqft	3500 +/- sqft		
Age	<input checked="" type="checkbox"/>				14	18	25 yrs	7 +/- yrs		
Bedrooms	<input checked="" type="checkbox"/>				1	2	4 rooms	2 +/- rooms		
Bathrooms	<input checked="" type="checkbox"/>				2	2	4	+/- rooms		
Fireplaces	<input type="checkbox"/>				0			+/- fireplaces		
Pool	<input type="checkbox"/>						pool	0 pool		

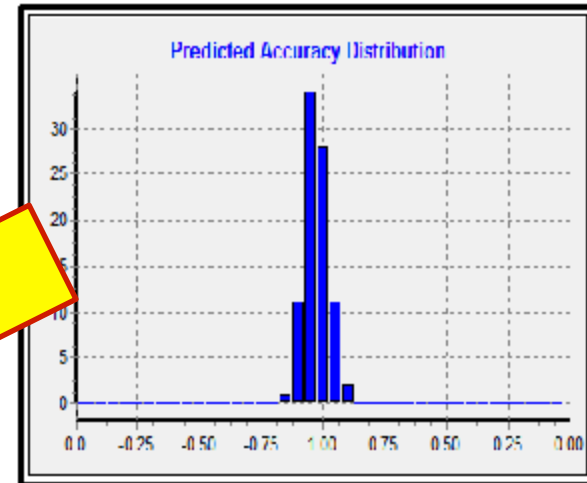
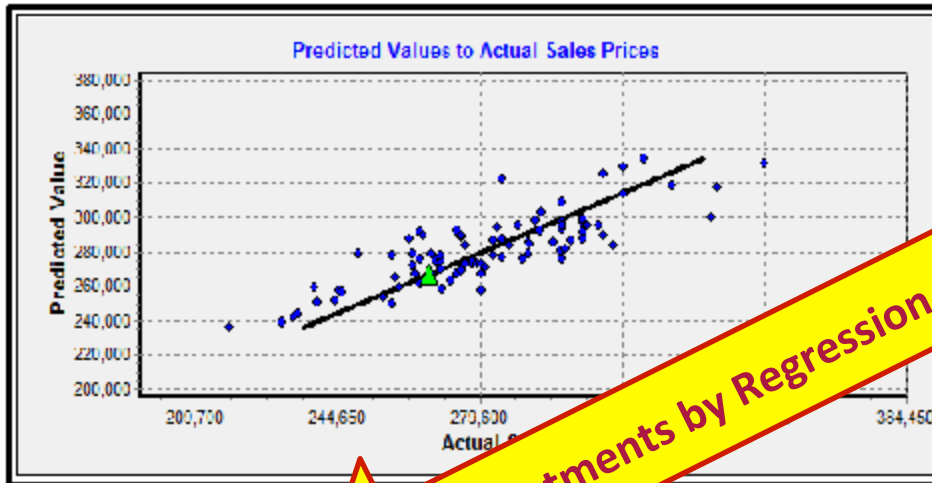
Typ	Include	Rank	Address	Sale Date	Sale Price \$	GLA (sqft)	Bsmt (sqft)	Site (sqft)	Age	Bedroo
S	<input checked="" type="checkbox"/>	880		8/16/2013	245750	1320	0	4791	18	1
S	<input checked="" type="checkbox"/>	827		7/31/2013	269900	1314	429	6098	18	3
S	<input checked="" type="checkbox"/>	819	10000	5/24/2013	276000	1315	429	5662	18	3
S	<input checked="" type="checkbox"/>	754	1444 W SPUR	10/30/2013	283000	1556	350	4356	18	3
S	<input checked="" type="checkbox"/>	753	1408 BRIARHOLLOW Ln	7/26/2013	283000	1469	480	4791	18	3
S	<input checked="" type="checkbox"/>	751	9768 BURBERRY Way	10/28/2013	275000	1433	570	5805	17	3
S	<input checked="" type="checkbox"/>	745	9862 BURBERRY Way	10/14/2013	276000	1409	590	5227	16	3
S	<input checked="" type="checkbox"/>	744	1350 LAURENWOOD Way	4/15/2013	231000	1317	0	3485	18	2
S	<input checked="" type="checkbox"/>	744	890 TIMBERVALE Trl	7/9/2013	268000	1387	420	5227	15	3

Importance of Feature

Comp Ranking



# Analytically Support Your Adjustments



Adjustments by Regression

Components of Value

Name	Value		P-Value	Significance
Base Value	121,984			
Gross Liv Area	89	to 106	0.00000	Very High
Bathrooms	-3,096	-6,765 to 598	0.40455	Very Low
Site Area (sqft)	8.11	6.47 to 9.76	0.00000	Very High
Garage	12,270	3,510 to 21,029	0.16530	Low
Carport	0	0 to 0	0	Excluded
Basement Area	20.47	10.23 to 30.72	0.04925	High
Basement Finished	15.34	7.87 to 22.81	0.04349	High
Year Built	-2,006	-2,883 to -1,129	0.02492	High
Fireplaces	-2,284	-6,246 to 1,678	0.56592	Very Low
Pool	0	0 to 0	0	Excluded
Spa	0	0 to 0	0	Excluded
Sales Date (day)	-50	-68 to -32.26	0.00620	Very High

Regression Output Statistics

Statistical Measure	Results	Confidence
Sample Size	87	Very Good
R Squared	69.35%	Acceptable
Adjusted R Squared	65.77%	Poor
COV	4.83%	Very Good
COD	3.94%	Very Good
Standard Error	5.19	Very Good
Quality of Data		Acceptable
Comparison of Subject Data		
Overall Agreement with Model Output		
Overall Agreement with Model Accuracy		
Indicated Value by Regression Analysis	\$	267,132

Get Rid of This



Reduces This



# Build Stronger Appraisals Faster



# Level the Playing Field



# Open Up Opportunities





# Attract New Appraisers





**OPPORTUNITY**

**BRIGHT FUTURE**

A PICTURE IS WORTH A THOUSAND WORDS  
Or maybe a thousand words are not enough?



**R. Wayne Pugh, MAI CRE, FRICS**  
**7423 Picardy Avenue Suite F**  
**Baton Rouge, LA 70808**

225-769-6000

[wayne@laappraisal.com](mailto:wayne@laappraisal.com)

<https://www.twitter.com/#waynepugh>

<https://www.facebook.com/rwpugh>

[Cool Tools Blog](#)



# Credits

Thanks to the following for their help with this presentation.  
All Patents, Trademarks, and Copyrights are used with their permission.

## **Steven Noga**

S.M.A.R.T. Analyst/CRM-ULink Product Manager  
ServiceLink, A Black Knight Financial Services Company  
412.776.1371

[Steven.noga@bkfs.com](mailto:Steven.noga@bkfs.com)

<http://www.smarterappraising.com>

## **Jeff Bradford**

Bradford Technologies  
408.360.8520

<http://www.bradfordsoftware.com/>