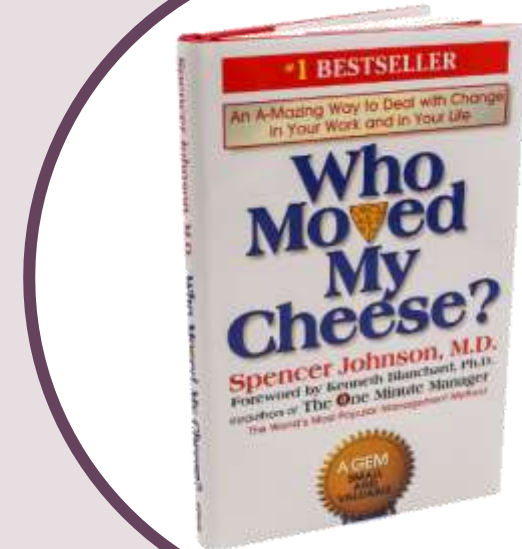


Who Moved My Cheese?

By Dr. Spencer Johnson

If you are concerned about the future
- Read It!

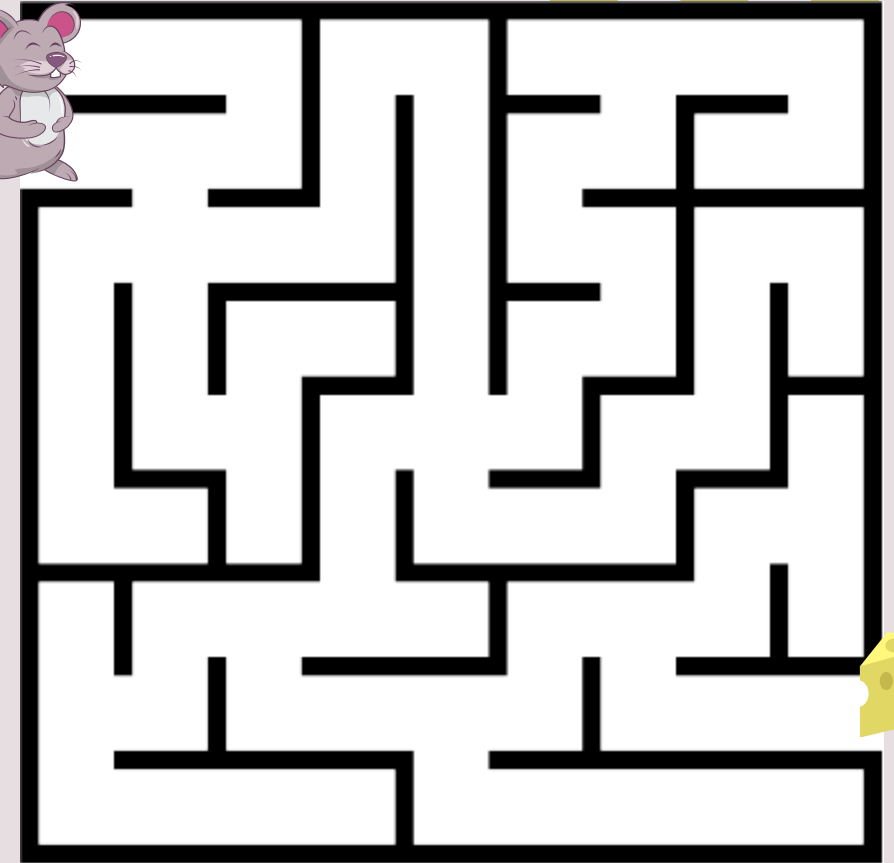


BRADFORD
TECHNOLOGIES

 Aloft

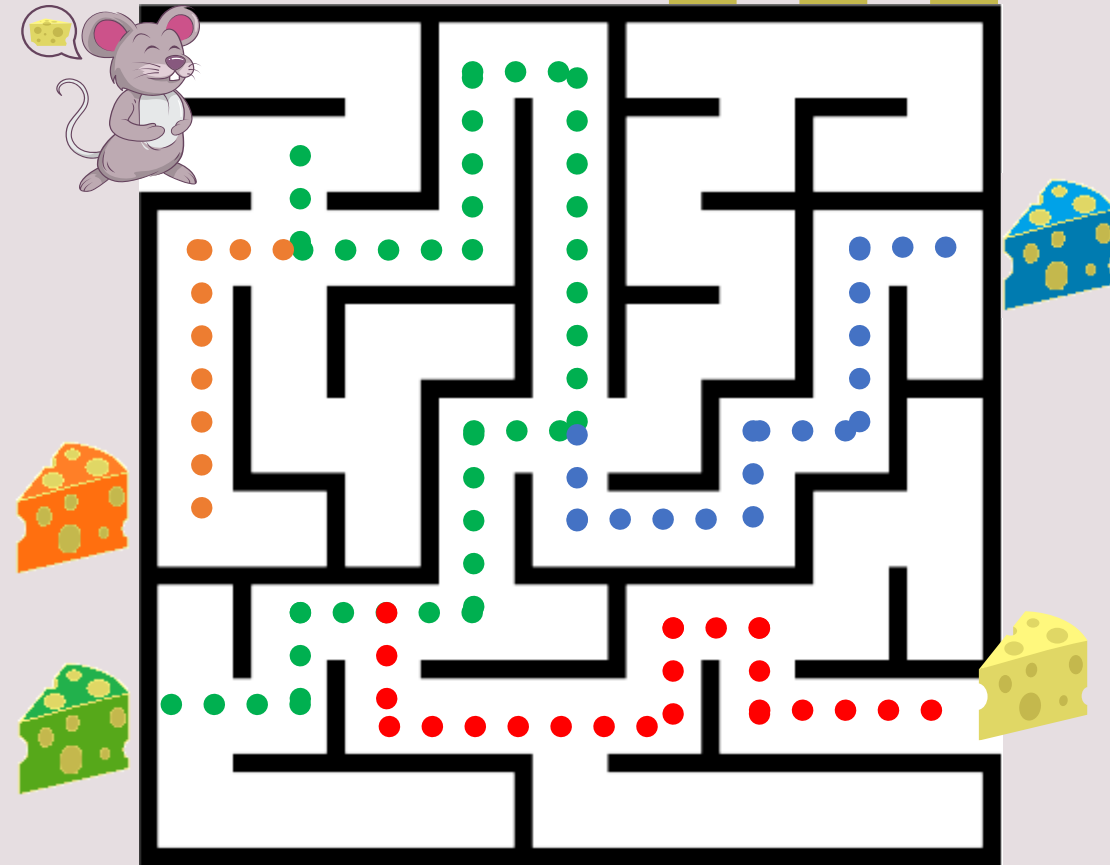


The Appraiser's Maze

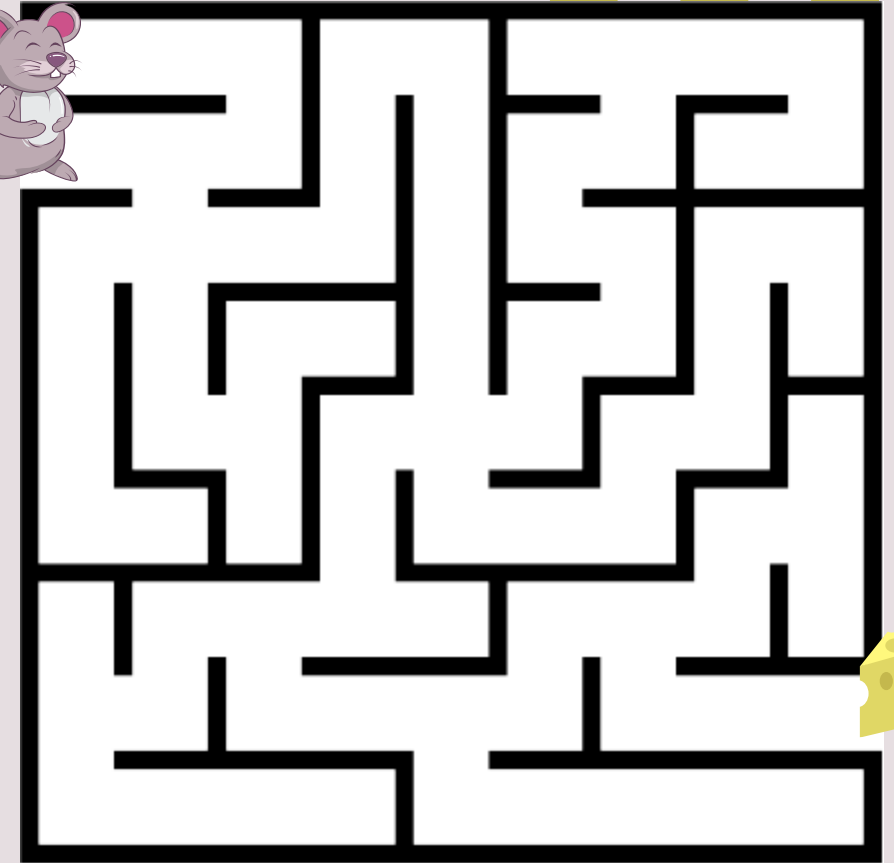


The Appraiser's Maze

There are going to be multiple solutions to choose from.

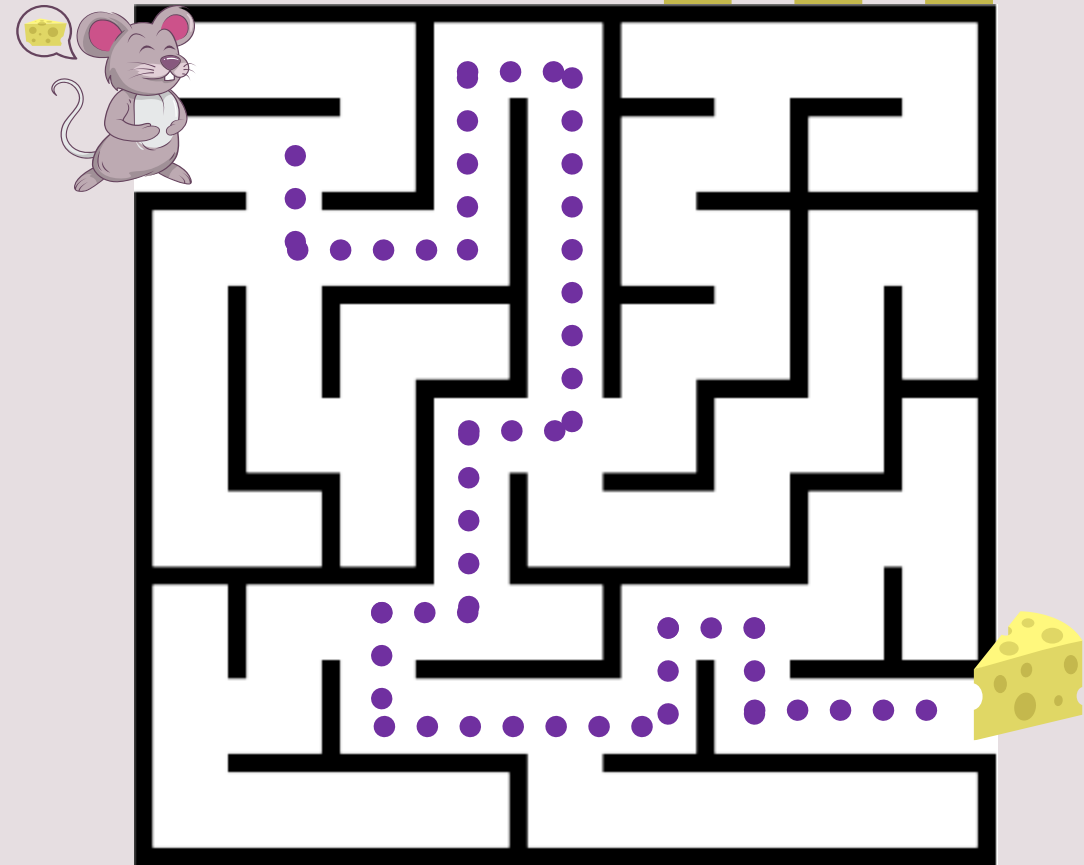


The Appraisal Software Vendors' Maze...



The Appraisal Software Vendors' Maze...

Each software vendor has to find their way through the maze and build a solution or go out of business



A Blueprint for a Better Future



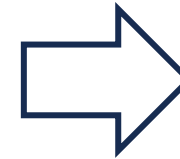
Our Challenge

1000's of Display Rules



Report Formats

- Single Family
- Condo
- Co-op
- Manufactured
- 2-4 units
- Restricted
- Completion



Uniform Residential Appraisal Report

123 FALLING TREE CT, TREEVILLE, VA 12345

SUMMARY

Opinion of Market Value	\$491,000	Market Value Condition	Subject to Repair
Final Value Condition Statement This appraisal is made subject to the itemized list of repairs or alterations below on the basis of a hypothetical condition that the repairs or alterations have been completed. This might have affected the assignment results.			
Effective Date of Appraisal	09/20/2019	Property Valuation Method	Traditional Appraisal
Assignment Reason	Purchase	Appraiser Name	Agatha Appraiser
Borrower Name	Betty Borrower		
	Bob Borrower		
Current Owner of Public Record	Jane Doe		
Contract Price	\$489,000		
Listing Status	Pending		

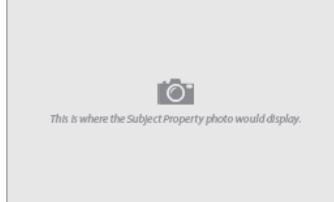
Property Description		Overall Quality	C4
Construction Method	Site Built	Overall Condition	C4
Attachment Type	Detached		

Planned Unit Development (PUD)	Yes	No
Condominium	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Cooperative	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Condo	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Subject Site Owned in Common	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Units Excluding ADUs: 1
 Accessory Dwelling Units: 0
 Property Rights Appraised: Fee Simple

Is the highest and best use of the subject property as improved (or as proposed per plans and specifications) the present use? Yes No

Zoning Compliance: Legal



This is where the Subject Property photo would display.

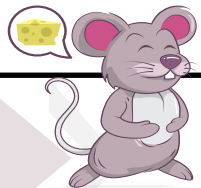
Apparent Defects, Damages, Deficiencies Requiring Action

The items listed below represent the As is condition as of the effective date of this report

Feature	Location	Description	Affects Soundness or Structural Integrity	Recommended Action	Estimated Cost to Repair
Dwelling Exterior					
Roof	Section of Roof	Damaged roof with missing flashing leaving the roof permeable to water intrusion.	Yes	Repair	\$1,500
Total Cost					\$1,500

As Is Overall Condition Rating: C5

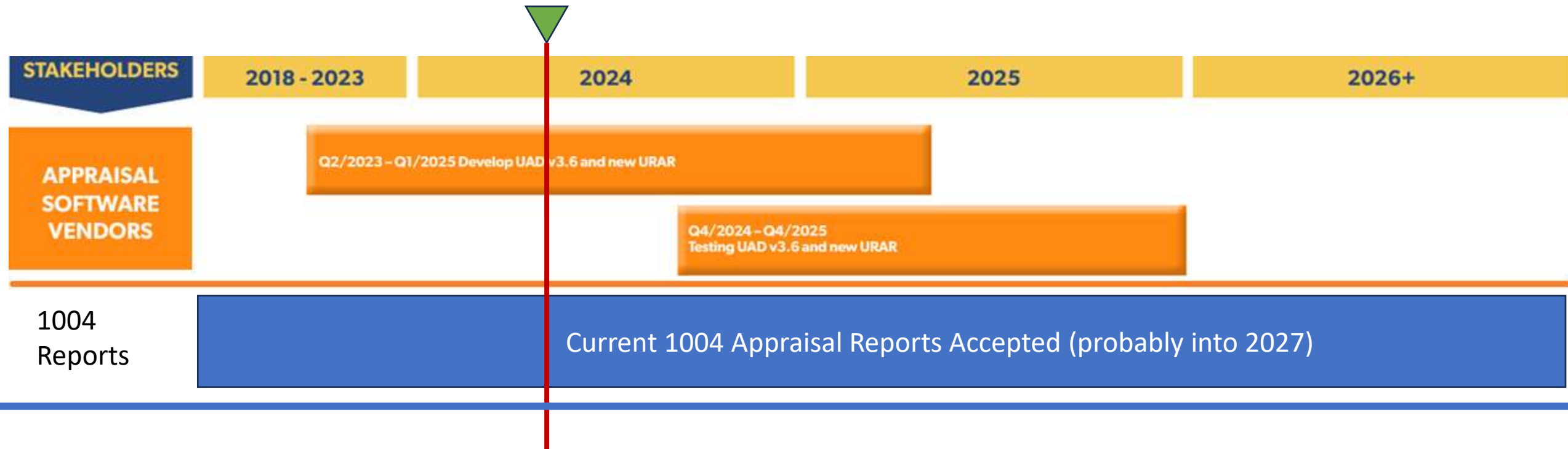
Existing condition of the property as of the effective date of this appraisal, excluding all required repairs, alterations, or inspections



**BRADFORD
TECHNOLOGIES**

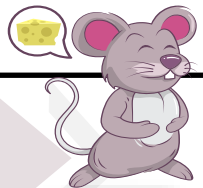
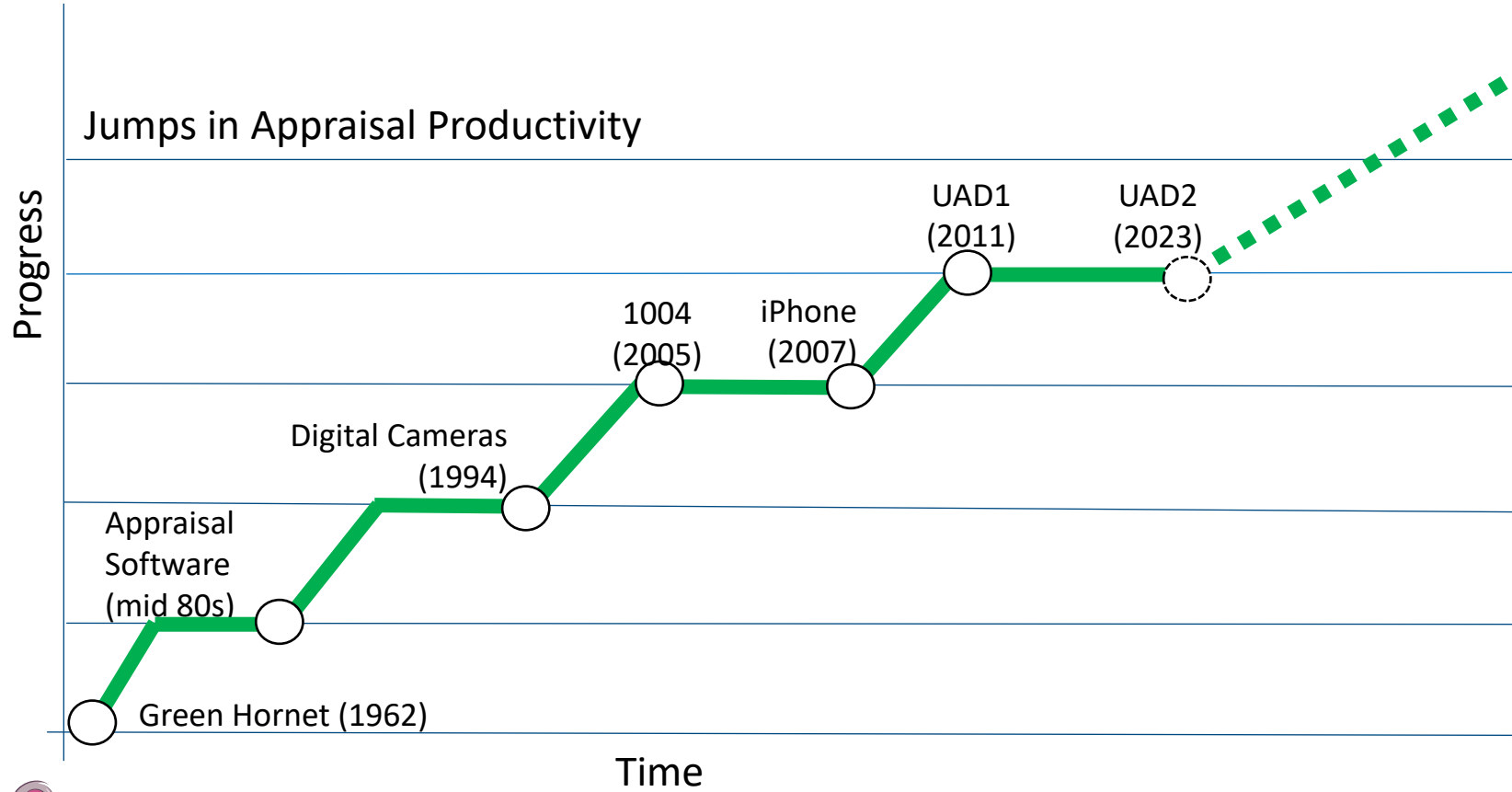


Our Timeline



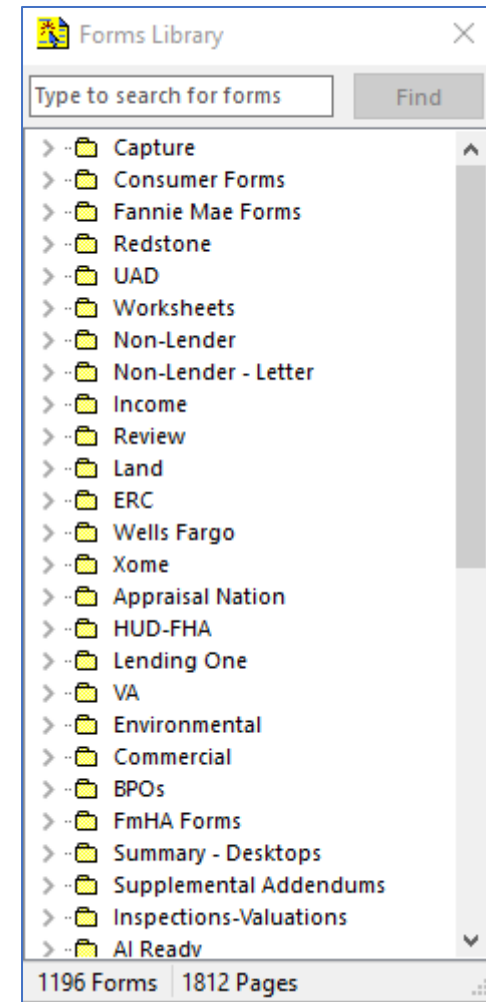
The Innovator's Dilemma

What do we build ?



Traditional Appraisal

The image shows a traditional appraisal report form, specifically a 'Uniform Residential Appraisal Report'. The form is filled with various fields, tables, and checkboxes, representing a complex and manual process. The text is small and difficult to read, but it clearly shows a structured layout for data entry.



Traditional Appraisal Process

Property Inspection



Gather Market Data



Analyze Data



Form Filling

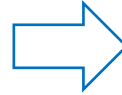


Create UAD XML

```
<Customers>
  <Customer CustomerName="Arshad Ali" CustomerID="C001">
    <Orders>
      <Order OrderDate="2012-07-04T00:00:00" OrderID="10248">
        <OrderDetail Quantity="5" ProductID="10"/>
        <OrderDetail Quantity="12" ProductID="11"/>
        <OrderDetail Quantity="10" ProductID="42"/>
      </Order>
    </Orders>
    <Address Address line 1, 2, 3/>
  </Customer>
  <Customer CustomerName="Paul Henriot" CustomerID="C002">
    <Orders>
      <Order OrderDate="2011-07-04T00:00:00" OrderID="10245">
        <OrderDetail Quantity="12" ProductID="11"/>
        <OrderDetail Quantity="10" ProductID="42"/>
      </Order>
    </Orders>
    <Address Address line 5, 6, 7/>
  </Customer>
  <Customer CustomerName="Carlos Gonzalez" CustomerID="C003">
    <Orders>
      <Order OrderDate="2012-08-16T00:00:00" OrderID="10283">
        <OrderDetail Quantity="3" ProductID="72"/>
      </Order>
    </Orders>
    <Address Address line 1, 4, 5/>
  </Customer>
</Customers>
```

Traditional Appraisal Process

Form Filling

A screenshot of a traditional appraisal form. The form is titled "Uniform Residential Appraisal Report" and contains various sections for data entry, including fields for borrower information, property details, and a table for listing items. The form is filled out with text and numbers.

Create UAD XML

```
<Customers>  
  <Customer CustomerName="Arshad Ali" CustomerID="C001">  
    <Orders>  
      <Order OrderDate="2012-07-04T00:00:00" OrderID="10248">  
        <OrderDetail Quantity="5" ProductID="10"/>  
        <OrderDetail Quantity="12" ProductID="11"/>  
        <OrderDetail Quantity="10" ProductID="42"/>  
      </Order>  
    </Orders>  
    <Address AddressLine="Address line 1, 2, 3"/>  
  </Customer>  
  <Customer CustomerName="Paul Henriot" CustomerID="C002">  
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    </Orders>  
    <Address AddressLine="Address line 5, 6, 7"/>  
  </Customer>  
  <Customer CustomerName="Carlos Gonzalez" CustomerID="C003">  
    <Orders>  
      <Order OrderDate="2012-08-16T00:00:00" OrderID="10283">  
        <OrderDetail Quantity="3" ProductID="72"/>  
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    </Orders>  
    <Address AddressLine="Address line 1, 4, 5"/>  
  </Customer>  
</Customers>
```

New Appraisal Process

XML Created First

```
<Customers>
  <Customer CustomerName="Arshad Ali" CustomerID="C001">
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      </Orders>
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    </Customer>
    <Customer CustomerName="Paul Henriot" CustomerID="C002">
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        <Order OrderDate="2011-07-04T00:00:00" OrderID="10245">
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        </Orders>
        <Address> Address line 5, 6, 7</Address>
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      <Customer CustomerName="Carlos Gonzalez" CustomerID="C003">
        <Orders>
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            </Order>
          </Orders>
          <Address> Address line 1, 4, 5</Address>
        </Customer>
      </Customers>
    </Customers>
  </Customers>
```

XML Defines Report

Uniform Residential Appraisal Report
123 FALLING TREE CT, TREEVILLE, VA 12345

SUMMARY

Copy of market Value	\$481,000	Market Value Condition	Subject to Repair
Market Value Condition Statement: This appraisal is made subject to the condition of repairs or alterations below on the basis of a hypothetical condition that the repairs or alterations have been completed. This might have affected the assignment results.			
Effective Date of Appraisal	09/20/2012	Property Valuation Method	Traditional Appraisal
Assignment Reason	Purchase	Appraiser Name	Quinn Appraiser
Appraiser Name	Betty Bowman		
Contract Number of Public Record	123456789		
Contract Price	450,000		
Listing Date	Pending		

Property Description

Construction Method	Site Built	Overall Quality	GA
Attachment Type	Detached	Overall Condition	GA

Planned Unit Development (PUD)

Construction:
Cooperative:
Condo:
Subject Site Owned in Common:
Units including this: 1
Accessory Dwelling Units: 0
Property Rights Appraised: Fee Simple
Is the highest and best use of the subject property as appraised consistent with the proposed use and the general use of the property? Yes No

zoning Compliance Legal

Apparent Defects, Damages, Deficiencies Requiring Action

The items listed below represent the as-is condition as of the effective date of the report.

Feature	Location	Description	Affects Soundness of Market Value	Recommended Action	Estimated Cost to Repair
Roof	Section of Roof	Damaged roof with missing shingles	No	Repair	\$1,000

As to Overall Condition Rating: CS
Existing condition of the property as of the effective date of this appraisal, including all required repairs, alterations, or improvements.

Order is Reversed



New Appraisal Process

Based on the Data, an appropriate Appraisal Report is generated

```

<Customers>
  <Customer CustomerName="Arshad Ali" CustomerID="C001">
    <Orders>
      <Order OrderDate="2012-07-04T00:00:00" OrderID="10248">
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        <OrderDetail Quantity="12" ProductID="117"/>
        <OrderDetail Quantity="10" ProductID="427"/>
      </Order>
    </Orders>
    <Address AddressLine="1, 2, 3"/>
  </Customer>
  <Customer CustomerName="Paul Henriot" CustomerID="C002">
    <Orders>
      <Order OrderDate="2011-07-04T00:00:00" OrderID="10245">
        <OrderDetail Quantity="12" ProductID="117"/>
        <OrderDetail Quantity="10" ProductID="427"/>
      </Order>
    </Orders>
    <Address AddressLine="5, 6, 7"/>
  </Customer>
  <Customer CustomerName="Carlos Gonzalez" CustomerID="C003">
    <Orders>
      <Order OrderDate="2012-08-16T00:00:00" OrderID="10283">
        <OrderDetail Quantity="3" ProductID="727"/>
      </Order>
    </Orders>
    <Address AddressLine="1, 4, 5"/>
  </Customer>
</Customers>
  
```

UAD2 XML



Uniform Residential Appraisal Report
123 FALLING TREE CT, TREEVILLE, VA 12345

SUMMARY

Opinion of Market Value	\$401,000	Market Value Condition	Subject to Repair
Effective Date of Appraisal	08/20/12	Property Valuation Method	Traditional Appraisal
Appraiser Name	John Doe	Appraiser License No.	123456789
Client Name	John Doe	Client Address	123 Main St, Anytown, VA
Contract Price	\$400,000	Contract Date	08/15/12
Listing Price	\$400,000	Listing Date	08/10/12

Property Description: 3 Bed, 2 Bath, Overall Quality: C4, Overall Condition: C4

Planned Unit Development (PUD): []

Condominium: []

Cooperative: []

Subject Site Owned in Common: []

Units Excluding Acre: 1

Accessory Dwelling Units: 0

Property Rights Appraised: Fee Simple

Is this report and data used for the subject property as improved (or as proposed per plans and specifications) the present use? Yes No

Rating Compliance: Legal

Apparent Defects, Damages, Deficiencies Requiring Action

Feature	Location	Description	Meets Standards of Professional Integrity	Recommended Action	Estimated Cost to Repair
Roof	Section of Roof	Damage to roof with missing flashing beneath roof penetrations by water	Yes	Repair	\$1,000
As to Overall Condition Rating: C4					Total Cost: \$1,000

Appraisal Report

Legacy Appraisal Form Name	Fannie Mae Form
Uniform Residential Appraisal Report	1004
Uniform Residential Appraisal Report (Desktop)	1004 Desktop
Uniform Residential Appraisal Report (Hybrid)	1004 Hybrid
Individual Condominium Unit Appraisal Report	1073
Individual Condominium Unit Appraisal Report (Desktop)	1073 Desktop
Individual Condominium Unit Appraisal Report (Hybrid)	1073 Hybrid
Exterior-Only Inspection Individual Condominium Unit Appraisal Report	1075
Exterior-Only Inspection Residential Appraisal Report	2055
Manufactured Home Appraisal Report	1004C
Individual Cooperative Interest Appraisal Report	2090
Exterior-Only Individual Cooperative Interest Appraisal Report	2095
Small Residential Income Property Appraisal Report	1025
Single Family Comparable Rent Schedule	1007

New Appraisal Report Creation

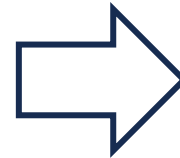
Smart Data Entry App

Enter data here based on 1000's of rules and property type.



Report Formats

- Single Family
- Condo
- Co-op
- Manufactured
- 2-4 units
- Restricted
- Completion



Uniform Residential Appraisal Report

123 FALLING TREE CT, TREEVILLE, VA 12345

SUMMARY

Opinion of Market Value	\$491,000	Market Value Condition	Subject to Repair
Final Value Condition Statement This appraisal is made subject to the itemized list of repairs or alterations below on the basis of a hypothetical condition that the repairs or alterations have been completed. This might have affected the assignment results.			
Effective Date of Appraisal	09/20/2019	Property Valuation Method	Traditional Appraisal
Assignment Reason	Purchase	Appraiser Name	Agatha Appraiser
Borrower Name	Betty Borrower		
	Bob Borrower		
Current Owner of Public Record	Jane Doe		
Contract Price	\$489,000		
Listing Status	Pending		

Property Description

Construction Method	Site Built	Overall Quality	O4
Attachment Type	Detached	Overall Condition	C4

Planned Unit Development (PUD) Yes No

Condominium Yes No

Cooperative Yes No

Conop Yes No

Subject Site Owned in Common Yes No

Units Excluding ADUs 1

Accessory Dwelling Units 0

Property Rights Appraised Fee Simple Yes No

Is the highest and best use of the subject property as improved (or as proposed per plans and specifications) the present use? Yes No

Zoning Compliance Legal

Apparent Defects, Damages, Deficiencies Requiring Action

The items listed below represent the As Is condition as of the effective date of this report

Feature	Location	Description	Affects Soundness or Structural Integrity	Recommended Action	Estimated Cost to Repair
Dwelling Exterior					
Roof	Section of Roof	Damaged roof with missing flashing leaving the roof permeable to water intrusion.	Yes	Repair	\$1,500
Total Cost					\$1,500

As Is Overall Condition Rating C5

Existing condition of the property as of the effective date of this appraisal, excluding all required repairs, alterations, or inspections

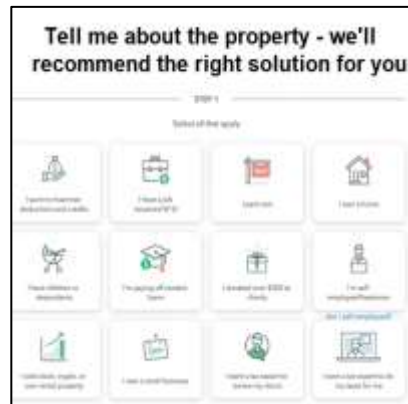


BRADFORD TECHNOLOGIES



New Appraisal Process

TurboTax Form Filling



UAD2 XML

```
<Customers>
  <Customer CustomerName="Arshad Ali" CustomerID="C001">
    <Orders>
      <Order OrderDate="2012-07-04T00:00:00" OrderID="10248">
        <OrderDetail Quantity="5" ProductID="10"/>
        <OrderDetail Quantity="12" ProductID="11"/>
        <OrderDetail Quantity="10" ProductID="42"/>
      </Order>
    </Orders>
    <Address> Address line 1, 2, 3</Address>
  </Customer>
  <Customer CustomerName="Paul Henriot" CustomerID="C002">
    <Orders>
      <Order OrderDate="2011-07-04T00:00:00" OrderID="10245">
        <OrderDetail Quantity="12" ProductID="11"/>
        <OrderDetail Quantity="10" ProductID="42"/>
      </Order>
    </Orders>
    <Address> Address line 5, 6, 7</Address>
  </Customer>
  <Customer CustomerName="Carlos Gonzalez" CustomerID="C003">
    <Orders>
      <Order OrderDate="2012-08-16T00:00:00" OrderID="10283">
        <OrderDetail Quantity="3" ProductID="72"/>
      </Order>
    </Orders>
    <Address> Address line 1, 4, 5</Address>
  </Customer>
</Customers>
```

Rules Engine



Appraisal Report

Uniform Residential Appraisal Report
123 FALLING TREE CT, TREEVILLE, VA 12345

SUMMARY

Opinion of Market Value	1485000	Market Value Condition	Subject to report
Final value condition statement: This appraisal is made subject to the receipt of copies or alterations before the date of a hypothetical condition that the report or alterations have been completed. This might have affected the assignment results.			
Effective Date of Appraisal	04/23/2015	Property Information Method	Traditional appraisal
Assignment Source	For Sale	Appraiser Name	Justin Appraiser
Business Name	Justin Appraiser		
Current Owner of Public Record	John Doe		
Contract Price	2400000		
Listing Status	Underway		

Property Description

Construction Method	Site built	Overall Quality	OK
Attachment Type	Detached	Overall Condition	2.4

Planned Unit Development (PUD) Conditions

Comprehensive	0
Conforming	0
Subject Site Owned in Common	0
Units Exceeding Acres	0
Accessory Dwelling Units	0
Property Rights Appraised	Fee Simple

In the highest and best use of the subject property as improved for as proposed per plans and specifications the present use:

zoning compliance	1	logit
-------------------	---	-------

Appraisal Defects, Damages, Deficiencies Requiring Action

The appraiser has determined that the following are of the effective date of this report

Defects	Location	Description	Affects Usability of Appraisal	Recommended Action	Estimated Cost to Repair
Roof	Section of Roof	Development with missing shingles leaving the roof vulnerable to wind damage.	No	Repair	11000

As to Overall Condition Rating: CS

Listing condition of the property as of the effective date of this appraisal, excluding all major repairs, alterations, or improvements.



New Appraisal Process - Seems Very Traditional

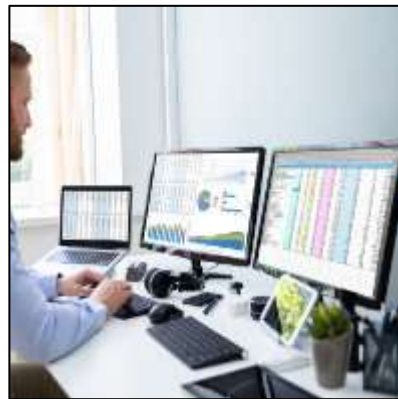
Property Inspection



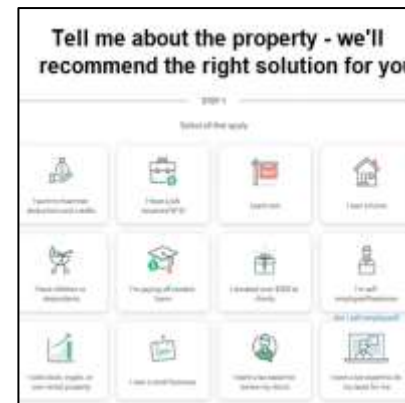
Gather Market Data



Analyze Data



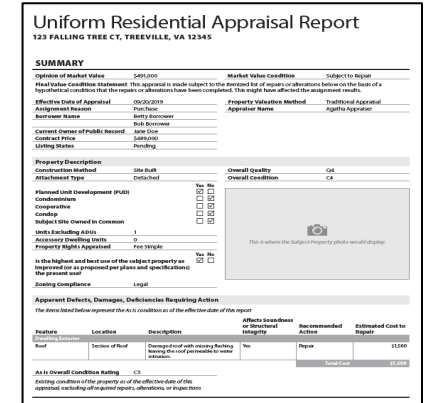
TurboTax Form Filling



XML



Appraisal Report



Here is where it started. Appraisal Modernization



“Appraiser’s should be at their desks, not in the field with a measuring tape.”

Fannie Mae, CEO
August 2017



Data gathering tools



Appraiser’s role



Appraisal forms



Appointment scheduling



Appraiser’s business model



Aging Population

Two Distinct Modernization Initiatives

1. Valuation Modernization (Appraisal Waivers)

- a. Freddie Mac: ACE plus PDR
- b. Fannie Mae: Value Acceptance plus PDC

Property Data Collector



7 days a week,
8 hours per day

2. Dynamic Appraisal Report with new UAD data

- a. Combined initiative by Freddie and Fannie Mae
- b. Traditional Appraisal Approach

Residential Appraiser



3 days a week,
4 hours per day

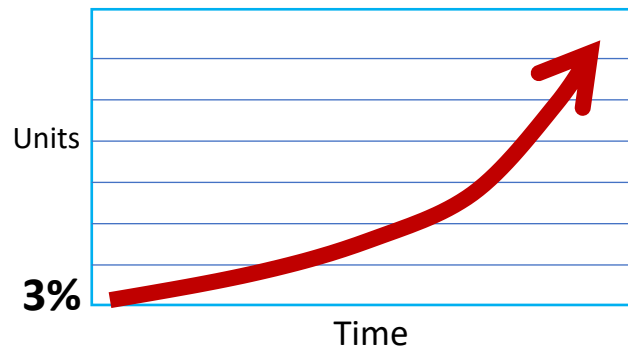
Current Prediction

Data Collections will Increase



7 days a week,
8 hours per day

Data Collector



Traditional Appraising Continues



This is what we have to do

Need to Reduce Time:



Need to Reduce Distance:



Our Plan for a Better Future



The New Appraisal Process must be:

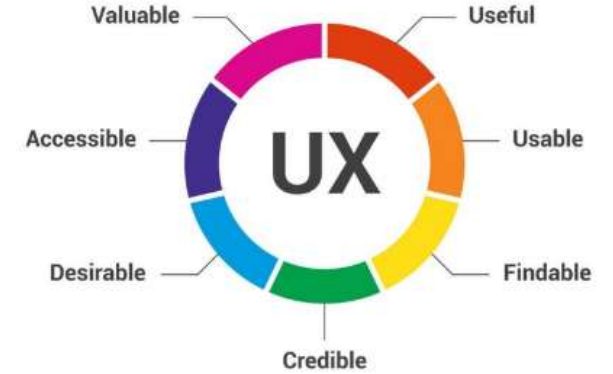
Fast.



Easy.



Fun.



Our Plan for a New Appraisal Process



**The
“Appraisal
Brothers”
have to
enjoy
using it!**

Our Plan for a New Appraisal Process

Use High Tech Tools

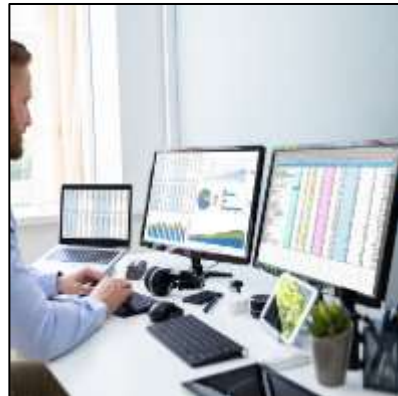
Property Inspection



~~Gather Market Data~~



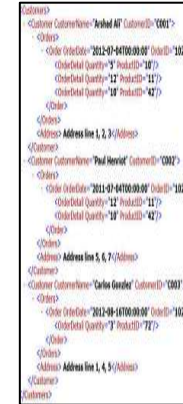
Analyze Data



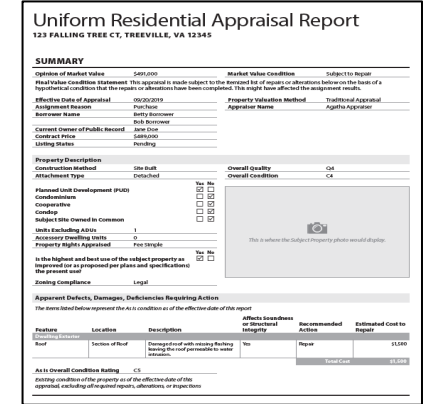
~~No Form Filling~~
TurboTax Form Filing



XML



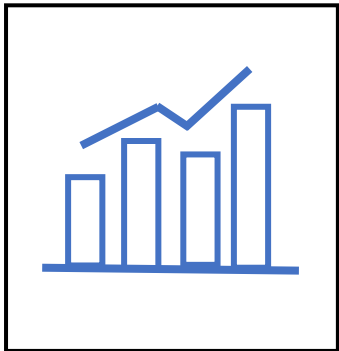
Appraisal Report



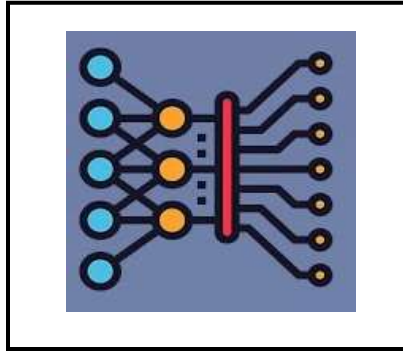
Our Plan for a New Appraisal Process

NightHawk

Analytics



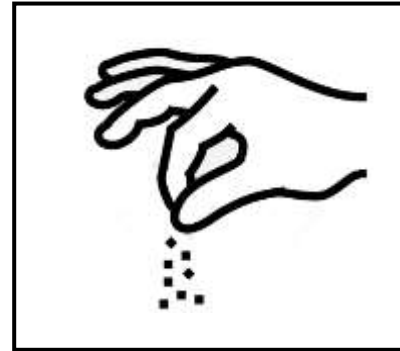
Deep Learning



Generative AI



Innovation



Experience



Valuation Analytics – 100s of Influence Models

Chemical Hazardous Sites and Residential Prices: Determinants of Impact

Author: Perry Wiegner

Abstract: The Geographic Pricing and Economic Rights to Pollution (GP/ERP) measure, operating at the parcel level, has been used to estimate the impact of hazardous sites on residential property values. The GP/ERP model uses the location of hazardous sites to estimate the impact of hazardous sites on residential property values. The GP/ERP model uses the location of hazardous sites to estimate the impact of hazardous sites on residential property values. The GP/ERP model uses the location of hazardous sites to estimate the impact of hazardous sites on residential property values.

Chemical Hazards

Natural Gas Pipelines and the Value of Nearby Homes: A Spatial Analysis

Authors: Michael A. Anderson, James J. Brown, and George H. Gilson

Abstract: We examine the effect of natural gas pipelines on the value of nearby homes in Broward County, Florida. We use an ordinary least squares regression model to estimate the effect of natural gas pipelines on the value of nearby homes. We find that natural gas pipelines have a positive effect on the value of nearby homes. We find that natural gas pipelines have a positive effect on the value of nearby homes.

Gas Pipeline

Gated Community Premiums and Amenity Differentials in Residential Subdivisions

Authors: Gregory L. Baskerville, Ronald W. Sparks, and Mark A. Souders

Abstract: We use hedonic models to measure price differentials between single family homes in gated communities and a random sample of non-gated communities in Shelby County, Tennessee. We find that gated communities have a positive effect on the value of nearby homes. We find that gated communities have a positive effect on the value of nearby homes.

Gated Community

The Impact of Traffic Noise on Housing Values

Authors: Ken Oudiz, Yung Hwang, Parth Dabholkar, and Anubhava Reddy

Abstract: We study the impact of traffic noise on housing values in the Los Angeles area. We use a hedonic model to estimate the effect of traffic noise on housing values. We find that traffic noise has a negative effect on housing values. We find that traffic noise has a negative effect on housing values.

Traffic Noise

Aging Populations and Master Bedrooms

Author: Marcus E. Allen, Justin O. Slaughter, and Christopher J. Carr

Abstract: We examine the effect of aging populations on the value of master bedrooms in the Los Angeles area. We use a hedonic model to estimate the effect of aging populations on the value of master bedrooms. We find that aging populations have a positive effect on the value of master bedrooms. We find that aging populations have a positive effect on the value of master bedrooms.

Master Bedroom

Modeling the Effects of Refinery Emissions on Residential Property Values

Authors: Robert A. Hemen, Yungyue Yan, and Paul Rosenfeld

Abstract: We examine the effect of refinery emissions on residential property values in the Los Angeles area. We use a hedonic model to estimate the effect of refinery emissions on residential property values. We find that refinery emissions have a negative effect on residential property values. We find that refinery emissions have a negative effect on residential property values.

Refinery Emissions

SCHOOL CHOICE PROGRAMS: THE IMPACTS ON HOUSING VALUES

Authors: Barbara H. Barlow, Michael A. Anderson, and George H. Gilson

Abstract: We examine the impact of school choice programs on housing values in the Los Angeles area. We use a hedonic model to estimate the effect of school choice programs on housing values. We find that school choice programs have a positive effect on housing values. We find that school choice programs have a positive effect on housing values.

School Choice

The Impact of Staging Conditions on Residential Real Estate Demand

Author: Mark A. Anderson, James J. Brown, and George H. Gilson

Abstract: We examine the impact of staging conditions on residential real estate demand in the Los Angeles area. We use a hedonic model to estimate the effect of staging conditions on residential real estate demand. We find that staging conditions have a positive effect on residential real estate demand. We find that staging conditions have a positive effect on residential real estate demand.

Staging for Sale

Docks' USA—A Spatial Hedonic Valuation of Waterfront Property

Authors: David Wilson and Mark Souders

Abstract: We examine the impact of waterfront property on housing values in the Los Angeles area. We use a hedonic model to estimate the effect of waterfront property on housing values. We find that waterfront property has a positive effect on housing values. We find that waterfront property has a positive effect on housing values.

Waterfront & Dock

Price Variation in Waterfront Properties Over the Economic Cycle

Authors: Randy B. Homan, H. Stacy Strawn, and Greg T. Slocum

Abstract: We examine the impact of waterfront properties on housing values in the Los Angeles area. We use a hedonic model to estimate the effect of waterfront properties on housing values. We find that waterfront properties have a positive effect on housing values. We find that waterfront properties have a positive effect on housing values.

Waterfront

Wind Turbines, Amenities and Disamenities: A Study of Home Value Impacts in Densely Populated Massachusetts

Authors: Ben Hens and Carol Ashken-Perdana

Abstract: We examine the impact of wind turbines on home values in densely populated Massachusetts. We use a hedonic model to estimate the effect of wind turbines on home values. We find that wind turbines have a positive effect on home values. We find that wind turbines have a positive effect on home values.

Wind Turbines

The Impact of Hurricanes on the Selling Price of Coastal Residential Real Estate

Author: Greg Hahn, Ed Bennett, and Mike Miller

Abstract: We examine the impact of hurricanes on the selling price of coastal residential real estate in the Los Angeles area. We use a hedonic model to estimate the effect of hurricanes on the selling price of coastal residential real estate. We find that hurricanes have a negative effect on the selling price of coastal residential real estate. We find that hurricanes have a negative effect on the selling price of coastal residential real estate.

Hurricanes

E-Grocery and Housing Prices: A New Nexus in Urban Economics

Author: Prof. Jiajie Shen, Prof. Wang Yang

Abstract: We examine the impact of e-grocery on housing prices in the Los Angeles area. We use a hedonic model to estimate the effect of e-grocery on housing prices. We find that e-grocery has a positive effect on housing prices. We find that e-grocery has a positive effect on housing prices.

Using MLS Data for Hedonic Price Modeling: An Experiential Learning Activity

Authors: Rebecca T. Allen and Matthew Souders

Abstract: We examine the impact of MLS data on hedonic price modeling in the Los Angeles area. We use a hedonic model to estimate the effect of MLS data on hedonic price modeling. We find that MLS data has a positive effect on hedonic price modeling. We find that MLS data has a positive effect on hedonic price modeling.

ABOUT THE INFLUENCE OF TIME ON SPATIAL DEPENDENCE: A META-ANALYSIS USING REAL ESTATE HEDONIC PRICING MODELS

Authors: Nicolas Durieux, James J. Brown, and George H. Gilson

Abstract: We examine the impact of time on spatial dependence in real estate hedonic pricing models in the Los Angeles area. We use a meta-analysis to estimate the effect of time on spatial dependence. We find that time has a positive effect on spatial dependence. We find that time has a positive effect on spatial dependence.

Time Adjustments to Comparable Sales Prices in Mortgage Appraisals

Authors: Dr. William M. Conway, Dr. Scott Davis

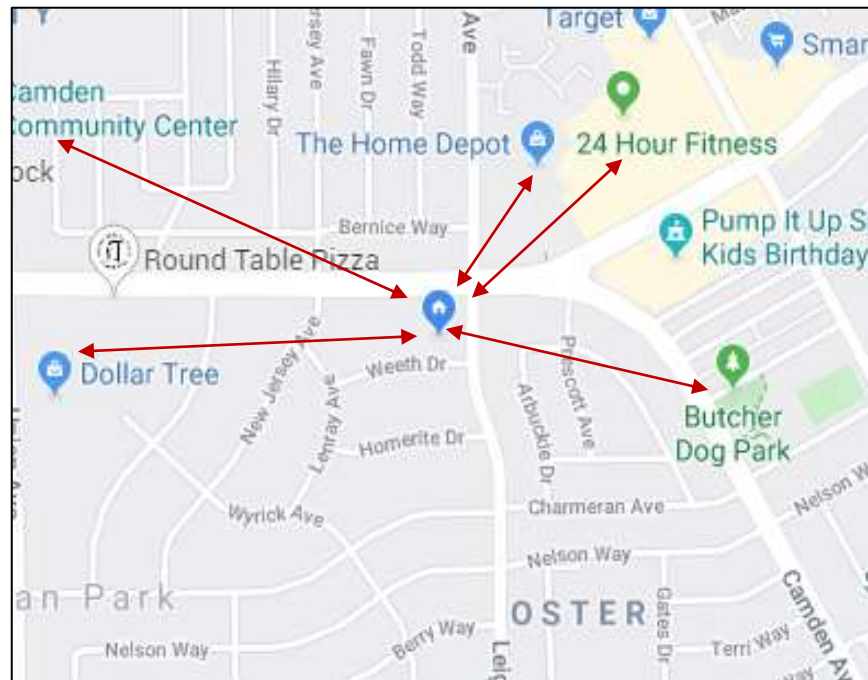
Abstract: We examine the impact of time adjustments on comparable sales prices in mortgage appraisals in the Los Angeles area. We use a hedonic model to estimate the effect of time adjustments on comparable sales prices. We find that time adjustments have a positive effect on comparable sales prices. We find that time adjustments have a positive effect on comparable sales prices.

.... on and on.



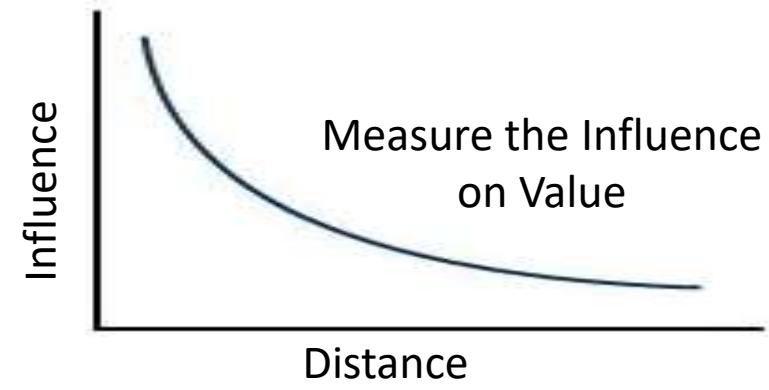
Valuation Analytics – Spatial Influences on Value

All Distances are Known



Measure Influences

- | | |
|---|---|
| <ul style="list-style-type: none">▪ Neighborhood Comps▪ Parks,▪ Lakes,▪ Rivers, Streams▪ Loudness | <ul style="list-style-type: none">▪ Convenience▪ Walkability▪ Freeways▪ Hazard Areas▪ Power & Gas Lines▪ Local Schools |
|---|---|

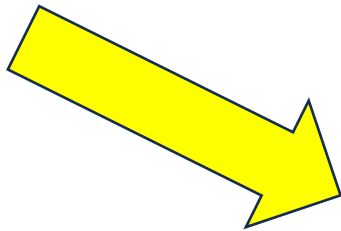


Deep Learning – Visual Insights

Condition & Quality Scoring

Condition Score C - 2.3

Quality Score Q - 2.7



Deep Learning – Combined with Other Services



FOXY Renovation Estimating Using AI

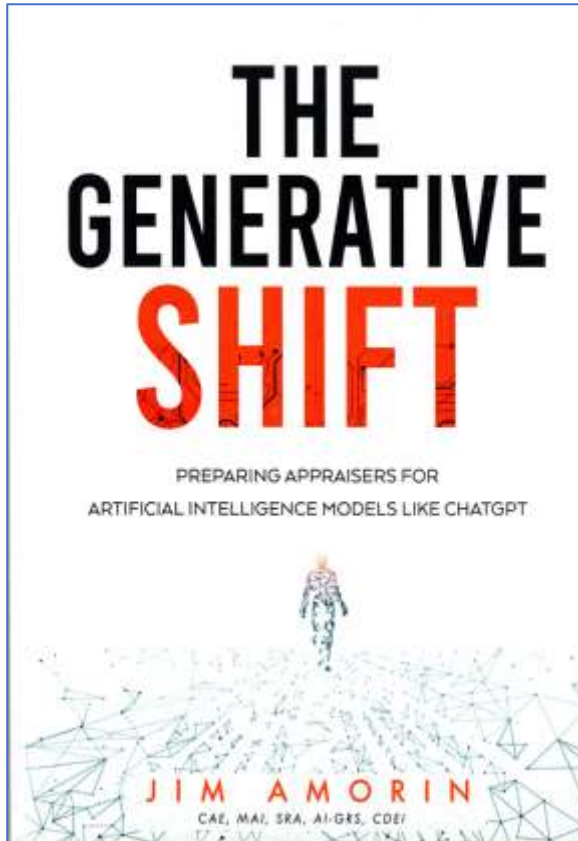
Renovation Cost Estimation

Inspire me ⓘ
Current property : Semi-Custom quality
Possibilities : Custom quality
Finish quality: luxury ⓘ



Total Estimated Gut Renovation Costs: \$41,000

Generative AI



Since the launch of ChatGPT, it's become clear that what once seemed the stuff of science fiction is here, now, with the potential to transform our lives.



Deep Learning
(Around 2017)

“a bus parked on the side of the beach”

Generative AI

“Please describe the image”



ChatGPT
(2023)

- The image is a composite or digitally altered photograph. The main background depicts a beach scene with the ocean in the distance. On the sandy beach, there are a few individuals and what appears to be a windsurfing board. Above the ocean, multiple kite surfers can be seen, with their kites floating in the sky.
- Superimposed over the beach scene is an image of a white bus with red detailing. The bus has a logo on its side and appears to be a city or public transport bus. The bus's digital display reads "EWANHOE L/R 395 BREAKY AVE."
- On the top right corner of the image, there is another smaller superimposed image, but it's not clear what it depicts from the provided resolution. Overall, the juxtaposition of the bus and the beach scene creates a surreal or unexpected visual.

Generative AI

Prompt: “Please describe this room, what it is and the appliances. Comment on its condition and quality using a scale of 1 to 6 with 1 being excellent condition and quality”



The room depicted is a kitchen. It features the following appliances and fixtures:

1. A white refrigerator to the left, with magnets and notes attached to its door.
2. A built-in microwave above the stove.
3. An electric stovetop with a range hood above it.
4. A white sink with a faucet is positioned by the window.
5. Cabinets are installed above and below the countertops, and they are finished in a muted pink or taupe color.

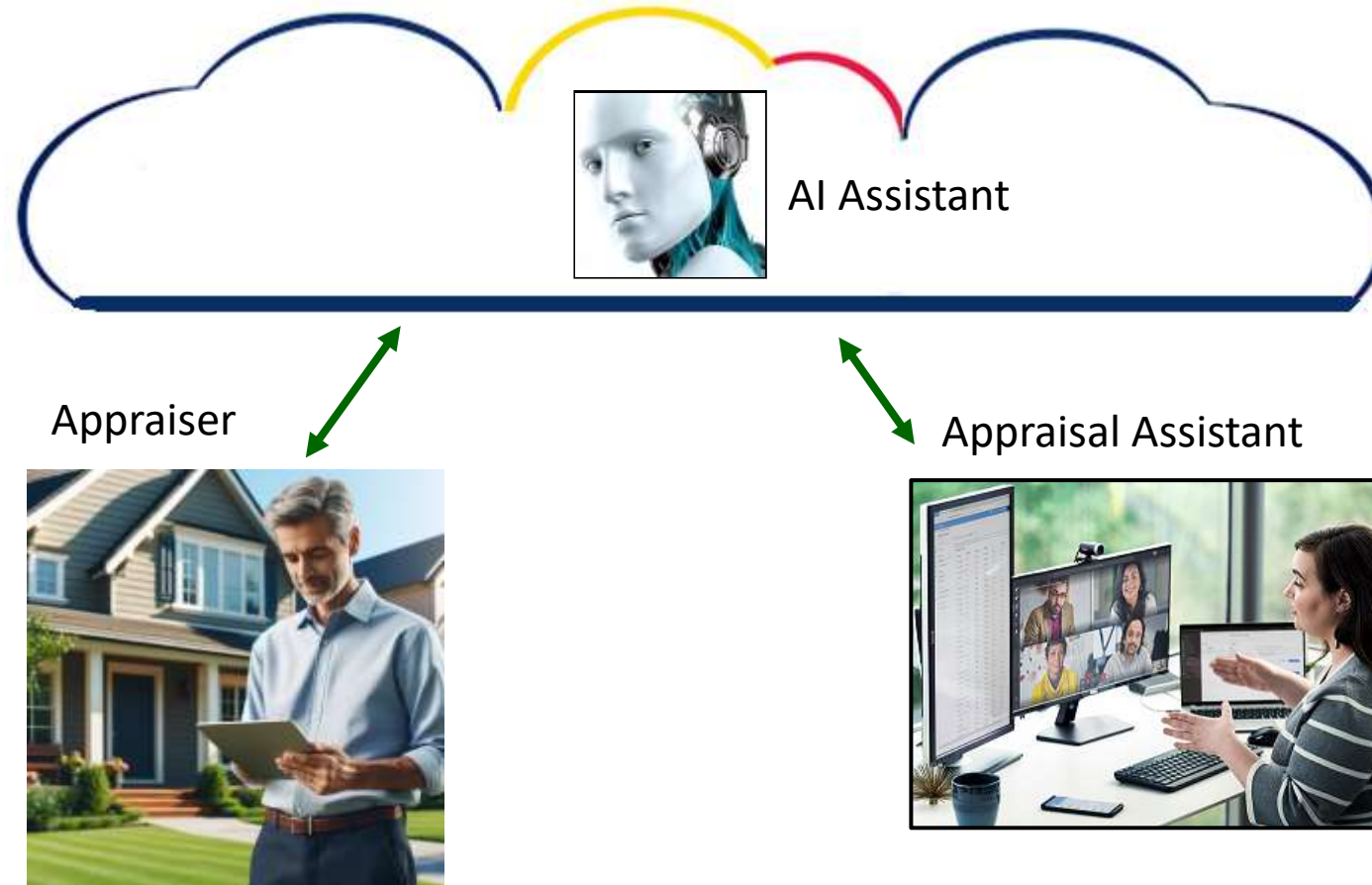


The kitchen is well-lit with recessed ceiling lights. The windows bring in natural light and overlook an outdoor setting. The counters are mostly clear, indicating a tidy space, but with a few items present, such as a dish rack with dishes, utensils in a holder, and some other small kitchen appliances. The floor is wooden and covered with a beige, patterned rug.

On a scale of 1 to 6 with 1 being of excellent condition and quality:

This kitchen appears to be in good condition. The appliances and fixtures seem modern and well-maintained, with no visible signs of wear or damage. The overall cleanliness and organization suggest that it is regularly used and taken care of. Based on the given scale, I'd rate this kitchen a 2. The only reason it doesn't receive a 1 is because it doesn't seem to be a brand new or luxury kitchen, but it's certainly above average in terms of quality and condition.

Goal: Complete the Appraisal Onsite, in Real Time



A Bridge to a Better Future

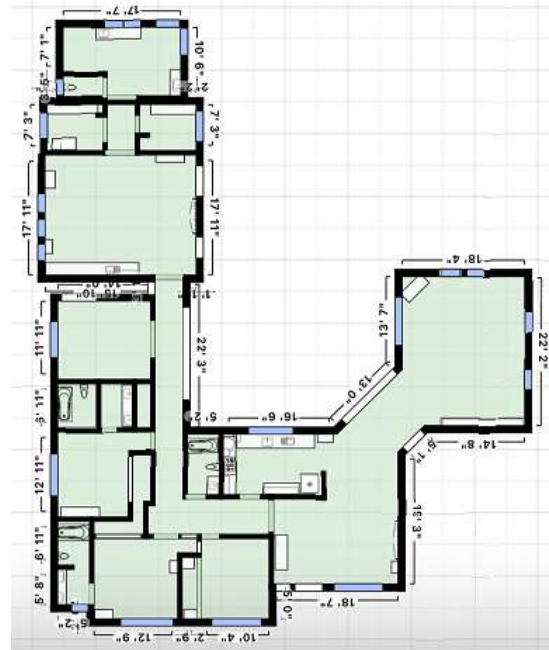


Appraisers Need to Use High Tech Tools

InstaPlan



About 10 minutes



Scan time + 6 to 24 hours



BRADFORD
TECHNOLOGIES

Aloft

Demo Time



BRADFORD
TECHNOLOGIES



 Aloft