AVMs: The Myth and the Reality; the Problem and the Solution

by George Dell, MAI

AVMs make me uncomfortable. They threaten my financial security. They threaten my prestige and sense of self worth. They threaten my family. I must fight back. These thoughts are common among appraisers today regarding automated valuation models.

Some appraisers say things such as: “We will fight and slay the enemy; we will level the playing field by making them meet the same rules and standards that we must meet.” Others say: “We must learn to love and/or live with the enemy,” or, “We must embrace what is good in them.” So, as a profession, what can we do? We should apply our skills to this problem, and perhaps along the way we will reconcile the differing points of view.

Identifying the problem—historically speaking

Appraisers have historically possessed two products, usually sold together: data and analysis. MLS data listings, public records, the appraiser’s files, and trading with other appraisers were the historical sources of data. We enhanced the data by making phone calls or cross-checking data sources. Only in a few areas, particularly in non-disclosure states, did appraisers have to develop the comp data each time. In most of those areas, formal or informal networks of appraisers created “databases” or shared data arrangements. All of these arrangements, along with membership in the MLS, gave us some control and ability to add value to the data itself.

Analysis has long focused on the “three best comps.” This is an intuitively reasonable number, and fits well on 8.5 inch wide paper, which fits well into a typewriter. While some appraisers felt the need to bracket major elements of comparison, others believed the use of more than three comps was a mark of appraiser insecurity. In rare cases, the use of an “outside” pair helped justify an adjustment. An appraiser’s time was best spent verifying and refining the three comps, making adjustments, then reconciling from the adjusted value indications.

Along came the Fannie Mae forms. With these forms came the “required” signed (in blue ink only) certification, which included the words “the lender/client may distribute the property description section of the report only to data collection or reporting service(s) without having to obtain the appraiser’s prior written consent.” Absent legal opinion, it appears that we long ago began to give away or sell our data. While this clause appears unfair, because as individuals we have no bargaining power – and it may in fact be an unconscionable adhesion contract camouflaged as a “limiting condition” – there is little chance of defeating this onerous “condition.” Are appraisers willing to stop signing these “limiting conditions”? Is there something else that can be done? There are no fast answers, but the questions are worthy of attention.

On a related note: the new certification form 1004B allows the lender/client to release your whole report – not just the front page – to data collection or reporting services. This may include your value opinion as well as your enhanced comparable data. This new information will significantly improve the reliability of AVMs, if it is made available to them.

AVMs arrived 10 to 15 years ago to meet a market need. AVM developers were nearly all appraisers. They had heard the words, “Just give me a ballpark number. Make it cheap and fast.” The AVMers saw the data. They saw the computers. They added a few simple statistics and appraisal tricks (e.g., adjust size at $55/sq.ft.). Later they added sophistication to their model (e.g., for new high-quality homes, go to $85/sq.ft., and $35/sq.ft. for older homes).

The AVMs were not very accurate, but clients were willing to save a $300 appraisal fee for a $25 AVM run. The “ballpark” number was delivered instantaneously. Someone said it was

(For a series of letters on AVMs, see Issues, pages 32-36.)
an appraisal, but the Appraisal Standards Board said this “estimate” of value was not an “opinion” of value, and subsequently the ASB called an appraisal an opinion of value. Thus, untouched by human hands, an AVM output, by itself, is not an appraisal. It runs itself. It is automated.

Dogma eat dogma
The market for AVM-type products was kept open by two dogmas of the appraisal profession: 1) an appraisal is an appraisal and 2) statistics is “just averaging.”

The first dogma was enforced by the Uniform Standards of Professional Appraisal Practice (in reality or in perception), and by how appraisers trained and reviewed each other, since we were subject to the USPAP “typical practice acceptability” measure of “market expectations” and “peers’ actions.” Effectively, we provided the same level of analysis to arrive at the point estimate of the “market value,” regardless of what the client’s needs were. Happily, this dogma has been smashed, first by the Departure Provision and now by the developing “scope of work” rule. However, market expectations tend to be fixed, while market needs are different and diverging.

The second dogma is the result of unfortunate timing. Just as desktop computer power and easy electronic data became available, the education appraisers needed disappeared. “Peers’ actions” were frozen in time because of the “acceptability” test as well as the fact that education about increasingly accessible analytic techniques never materialized.

As time passed, AVMers got more clever. Some AVM products had better magic. Some worked better for special audiences (local markets). Some worked everywhere, but with less accuracy. Each believed their product had the best magic. Being good magicians, they all knew never to show the audience the secret or let their AVM competition know what was inside their black box. All an AVM is is a black box with a funnel on top. You put data in the funnel, the box whirrs and clanks, and out comes the “estimate,” which is not an appraisal.

Much of the market for valuations, particularly the lending market, came to believe it was just a matter of time until they could get rid of those pesky appraisers. AVMs were getting better, and the data was getting better. Some of this was appraiser data. The market had learned to cope with AVM variability (low accuracy) as a legitimate trade-off for appraiser lag.

But the market, which had demanded and gotten used to cheaper and faster, wanted more. It now also wanted better. Around 2001, the market was rediscovering the benefit of real eyes and ears on the ground. The discovery birthed the need for a product designed to fill the “gap” between AVM blindness and appraiser traditionalism. This product need has evolved to the need for “tools with appraisers” or “appraisers with tools.” Either way, we are “de-automating” the automated model.

The current state—data overload
Appraisers do not control the data. They haven’t for a long time. While they once had better access and methods to enhance and improve data, today we are in the information age. Technology, the Internet, and public familiarity have taken away some of our “value added.”

Currently, MLS data for listed properties is publicly available in nearly all areas. Effectively, it is no longer owned by anyone. It is just factual data. The public can get it. Appraisers can get it. AVM providers can get it. It appears the trend is the same for your data enhancements and opinions of value.

Data, which was hard to get, is now too easy to get, which creates a new problem. We now have data overload. Masses of data are hard to understand. They can be overwhelming. How do we transform masses of data into useful information? Can this problem be the new market need for a new “value added”? To answer this question we must look at what the market needs are and how AVMs fill some of those needs.

AVMs: The lender’s point of view
AVMs have good speed and low cost. They cannot be bribed. Another advantage of national AVMs is that lenders need work with only one or a few vendors. The appraisal management problem disappears. Clients often prefer universality to accuracy. AVMs never get cranky or too busy. The speed helps compete with other lenders chasing the borrower dollar. AVMs can serve to avoid some appraisals. Low loan-to-value situations simply do not need a full appraisal or even a drive-by. Adequate insurance secures nearly all other risks.

On the other hand, AVMs have varying reliability. So where it matters, in a high loan-to-value situation, most AVMs are inadequate. Interpretation is different for each black box. AVMs cannot observe the subject, its condition, safety hazards, lot utility, view, traffic conditions, adjacent negative land uses. They cannot tell if it is really a house (a highest-and-best-use issue). They work poorly for unique properties and for mixed neighborhoods. They can err greatly in either direction.

The solution as seen by the AVM people
The clients and the AVM developers know that the appraiser (or a properly trained property inspector) is needed to meet some of their needs. The “gap” product, it is hoped, will use the best analytic tools of AVMs and the best research and observation abilities of appraisers. Combine the two and you get closer to the accuracy and reliability the market wants.

The market wants appraisers to do a variety of things, depending on their needs. Appraisers can provide better subject information—from a drive-by to an interior inspection—with varying levels of description. They can confirm or provide better
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comparsable information. At a minimum, they can look
at the comparables the AVM has chosen, and confirm or deny
their accuracy. Or developers can trust appraisers to make
the decision as to whether a drive-by appraisal or interior
inspection is needed. This is called “bump logic” where the
appraiser or someone else decides to go to the next higher
level of valuation reliability.

The lender, the appraisal management company or the
AVM provider is in charge, and hires the property inspector
or appraiser, the “bump” expert. They may even continue to
claim that it is not an appraisal, that the human is not really
providing any judgment or opinion but just gathering data.
Just helping decide what level of reliability is needed. Just
confirming the “fact” that the highest-and-best use is a house.
Alternatively, they will ask the appraiser to “review” the AVM
and then agree or disagree with the value. In either case, the
lender-client, the AMC, or AVM provider is in charge. Rarely
does a lender ask an appraiser to run an AVM. It can happen
with smaller lenders, or perhaps even with mortgage brokers,
but it is rare.

Filling the gap: appraisers working with AVMs
AVMers and lenders see appraisers working with commercial
models in two ways. One is with the “fixed” AVMs. The other
is appraiser-assisted valuation models (AAVMs). In either case,
appraisers are not working with the internal tools used by the
AVMs and AAVMs, they are working outside the black box,
or at best tweaking the knobs and buttons given to us on
the outside of the box.

But they are not inside the box. Fixed AVMs are black boxes;
however, the output may show some of the data the AVM used.
Seldom will the AVM show all the data it tried, for then
competitors will learn too much about the model. But usually
it will show several comparables, more than just three. Also,
most AVMs show the results of several “approaches” to value
estimation. These may include multiple regression, resale
indexing, expert systems, assessor value modification, and
other “sub black boxes.” Some build in feedback systems.
Others are such kluges, they will never have the needed
flexibility to adapt to changing conditions. Most are very
clever. They reluctantly reconcile to a point answer, a point
estimate, which is not an appraisal.

The client usually wants to know: “Is the AVM estimate
reasonable?” This is difficult, as the appraiser would need to
do some level of appraisal to decide if that is the right value
or not. Conceivably, in the extreme, appraisers could scope
themselves out of this (if the client agrees) – “I did nothing, but
the number feels about right.” I suspect some clients would
actually be happy with this, if you and they were satisfied
with your general knowledge of this market. But this situation
is uncommon, because most AVMs now provide “comparables.”

If an AVM provided just a point estimate, and nothing more,
it would be difficult for an appraiser to provide any opinion
without doing an appraisal at some level. Then the appraiser
would compare the AVM “estimate” with the appraisal “opinion.”

A variety of situations can come up. With fixed AVMs,
appraiser participation will usually be limited to the appraiser
opining on the following:
1. “comparables” used by the AVM;
2. the subject actually existing;
3. the “reasonableness” of the value estimate.

It is important to note that any reference to a value estimate
now becomes an appraisal opinion. When appraisers alter
the input or affect the output or communicate opinions or
conclusions, it becomes an appraisal, subject to USPAP. The
only exception is if you simply push the “go” button on an
AVM, and it is clear to the reader you have no opinion on the
appropriateness of the model or the value estimate.

Working with “adjustable” AVMs
At the most fundamental level, there are only two things to
adjust. One is the data input. The other is the analysis or
algorithm that is performed on that data.

Data input has three elements to consider: completeness,
quality and selection. An experienced appraiser, geographically
competent in an area, will have a sense of all three.

Completeness is really an element of quality, but is import-
ent enough to consider separately. It is the proportion of
relevant sales included in the database. We could give a rule
of thumb, say 90 percent completeness, as “good enough.” But
the key is: what are the characteristics of the remaining 10
percent. Take, for example, where the missing 10 percent are
mostly the highest priced homes in an area, where the owners
wished to conceal their purchase price. Then the nature of the
missing sales will bias the results downward. (Data bias is
different from appraiser bias, but may be similar in effect).
The appraiser may be ideally suited to identify and compensate
for data bias, but it means you must know something about the
nature of the omitted sales.

In cases where the missing sales are randomly spread out,
there will be no bias, but the results will be less reliable. An
adjustable (de-automated?) AVM may allow you to insert the
necessary sales into the data selected for analysis, then rerun
for an “appraiser-assisted” estimate.

Quality of the available data has two basic elements. One
is whether important data fields (property characteristics) are
missing. The other is how accurate the data fields are. For
example, in the Long Island area, public records do not show
living area. In other areas, living area shows, but is often inaccu-
rate. In one data source for Bakersfield, Calif., the square footage
field usually reflects the house footprint area, so that two-story
homes often show too small a living area.

With missing data fields, results will be less reliable. If
the homes with missing fields are similar in some way, the
results will be biased. For example, if smaller, older homes
generally have the square foot field missing, the results may
be biased. If the subject itself is a smaller, older home, the
results will also be less reliable.

If the AVM allows, the appraiser may be able to insert or
edit the needed data fields, thereby improving the reliability
of the model. The appraiser may be able to complete and/or
improve important data fields. There are two basic ways of
doing this: 1) The appraiser may refer to other data sources, such as prior appraisal files or sources that would not have been available to the AVM provider. (This is more common than you might think.) 2) On rerunning the AVM with the improved data, the appraiser may describe the work done, and provide an opinion of value based on the AVM and the work done.

Selection is something that AVMs, in general, do not do well, given available econometric techniques. The AVM may allow the appraiser to delete sales as well as add to them. Again, the appraiser should typically document any modifications to the model, reference or show the new AVM run, and provide a signed certification with the opinion of value.

Whether or not the internal workings of the black box are fully understood, in each of the above cases, the appraiser has applied judgment to the appraisal model. The result is always an appraisal opinion, fully subject to USPAP.

Staying out of trouble

This type of work can be profitable, but requires some preparation. Appraisers should approach it as they would when dealing with a property type new to them or a technique they have never used before. It is always hard the first time or two, then it gets easy.

The good news is that there is very little difference in the thinking patterns needed for working with an automated or a “de-automated” valuation model. Rely on your decision-making skills in data selection as well as the model even though much of the model may be hidden from you.

In working with AVMs, it is important to review two portions of USPAP. One is Advisory Opinion AO-18, which deals specifically with AVMs. The key points are:

1. You have a basic understanding of how the AVM works;
2. You must be able to use the AVM properly, if that is part of your assignment;
3. The data and the AVM must be appropriate to the assignment;
4. The AVM output must be credible (supported to the degree necessary for the intended use);
5. The output must be sufficiently reliable for use in the assignment.

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The second important USPAP portion is “Scope of Work.” Currently, it can be found as Standards Rule 1-2(f), and the other development standards, and within the reporting standards. However, the proposed Scope of Work Rule is available as an exposure draft (www.appraisalfoundation.org) for possible adoption effective 2006. While not yet a rule, it contains good patterns to follow.

The key point is for appraisers to be totally clear on assumptions and conditions, pointing out, for example, that the model’s algorithm (analytical process) is not available to them; stating clearly what the model allows to be modified; and stating or describing what they have and have not done.

An appraiser working with a pre-selected AVM can only evaluate the model or try to improve it. Even in the case where you can choose one from several AVMs, the choice is still quite “coarse.” For example, let’s draw a carpentry tool analogy.

You are asked to cut a long 2 x 4 board into two 3 ft. lengths. You are given a choice of three tools: 1) a claw hammer; 2) a power drill with a $3$ bit; or; 3) a trained beaver. Which do you use, and what do you write in your report?

I would let the reader know I was limited to the three choices. I would choose, and let the reader know why I chose a particular method. I would probably choose the trained beaver. I would explain to the reader my reasons: that the beaver was well trained in following the cut line, usually produced a more even cut than the other two methods, and was particularly industrious and reliable on the type of wood in question. In my opinion, the cut would be the best available, given the choices.

I would also let the reader know about my wood processor and my power circular saw.

Competing well
While working from an AVM may or may not produce a more reliable opinion than if you had simply done a traditional appraisal, nevertheless, it is a legitimate process – and service – desired by clients. It produces an outcome and it can produce an income.

What is the real solution for the individual appraiser and for the profession? Every advantage the AVM has is because of the tools inside the box. Appraisers can learn to use those tools. However, there are certain tools that blind AVMs cannot use, but appraisers can. There is a synergy between modern digital tools and the appraiser brain that cannot be matched. The tools are not that difficult to learn, nor are they hard to use. In fact some of them are miraculously fast. They are the data reduction tools. Even in areas of poor data, or unique property types, these tools are very useful.

Some of the tools inside the black box are complex simply because there is no human interaction or judgment. They must somehow try to adjust for every possible unusual condition, atypical property or different circumstance – an almost impossible challenge.

And what about the promised tools outside the box? Why do they work? Again, it is because humans can see and self-direct. So what are these tools? Very simply put they are:

1. Graphics
2. Statistics
3. GIS (geographic information systems)

Graphics—Simple graphics tools such as scatter graphs, trend lines, histograms, box and whiskers, leaf and stem can quickly describe markets, property characteristics, market trends and economic relationships. They can be used as a powerful comparative tool, and they provide an efficient, colorful and professional communication method.

Around 2001, the market was rediscovering the benefit of real eyes and ears on the ground. The discovery birthed the need for a product designed to fill the “gap” between AVM blindness and appraiser traditionalism. This product need has evolved to the need for “tools with appraisers” or “appraisers with tools.” Either way, we are “de-automating” the automated model.
Statistics—Overwhelming amounts of data can be reduced to an understandable and useful measure. Descriptive statistics put numbers on what graphs show. They can be plugged directly into our analyses, using the same methods presented for dealing with AVMs. The difference is that now you are in charge. You can pick the best tool for the job. You can analyze “all information applicable” (per USPAP) in an organized and complete way. And you can “show your work,” something the secret AVM boxes cannot do. You will be able to meet a huge market need that AVMs cannot.

GIS—Location, location, location. As it turns out, all real estate is geographically based. GIS is the digital/visual representation of data. Again, the AVM is blind. While it can incorporate some geographic data, some it cannot. You can. GIS data sources, mostly governmental, provide some direct analytical ability, at least to control the layers you view. Real estate data almost universally has geo-coding, or can be geocoded quite closely. The combination of specialized data with visualization ability provides the most powerful analysis ability and reporting method. This is the future.

What can you do? 1) Bring your statistical/graphical skills back to your high school or college level. The ideal is a statistics class from the economics department of the nearest four-year university. Nearly all have an extension enrollment open to anyone. 2) Take advantage of Appraisal Institute statistical courses and seminars. 3) Play with the statistical and graphical functions in your spreadsheet software. While most of these are quite inferior and more difficult to use than those in real analytics packages, they have some elementary usefulness. Use the “help” function to read the descriptions of what each tool does.

Install and play with the following “data analysis” tools: 1) scatter graph; 2) histogram; 3) trend lines (linear and polynomial); 4) descriptive statistics; and 5) regression. These are all forms of data reduction, making large (and small) data sets understandable to you and your client. Data hoarding is the past. Data reduction is the future.

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