The Three-Cornered Hat: A Fantasy Dance

Perils of Using Traditional Market Analysis for Elder Housing Development and Takeover

Part 1 of 3

by G. William Bailey and Timothy E. Detwiler

Assisted living development has gone out of control in recent years, aided by distortions in capital markets. The authors argue that the last line of defense against rampant overoptimism, the traditional (subjective) market feasibility study, fell short. The method appears to be scientific but is, in fact, an "elastic yardstick." The malleability of the method creates "The Three-Cornered Hat," a fantasy dance in which developer, lender, and analyst pretend that the yardstick is not elastic. Result? Projects that should have been disqualified were approved and then lost money. There are new alternatives to the traditional-method market study.

Imagine a pilot without an altimeter, airspeed indicator, attitude indicator, or radar flying into a fog bank. Experience in uncrowded skies and unlimited visibility is no help in the fog; his passengers are in peril. In the senior housing market, in which the losses from 1998 assisted-living development alone probably topped $400 million[1], the analyst using traditional methods is in that pilot's seat.

Analysts with 20 years or more of experience started working when facilities were 30 miles apart, markets did not have multiple overlapping market areas, and there were not millions of interacting variables to consider. A market analyst at that time could fly using the traditional method, that is, without modern instruments. The method was passed down, often apprentice-style ("this is the way it is done"), without critical examination—even as reality changed beneath their feet.

Years ago, traditional analysis might have reduced risk in the case of one facility sited in isolation from other units. Overwhelming complexity was not a problem. That was then, and this is now.

Today, such an approach is folly for two reasons. First, quantitative techniques exist. Second,

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the traditional methodology is flawed, as will be discussed later in the article.

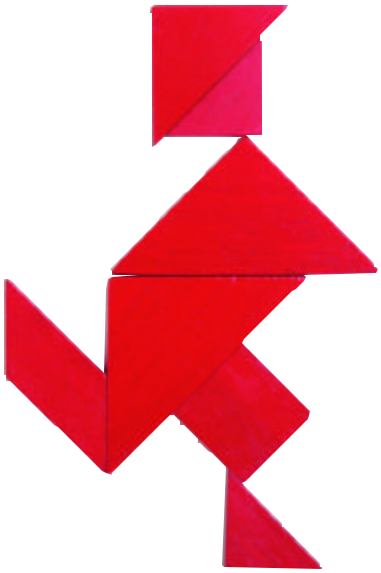
Therefore, it is no surprise that the traditional method—used by virtually every elder housing analyst from "Big Five" accounting firms to the smallest practitioner—can be associated with massive losses. It should be reexamined.

Market Analysis

The purpose of market analysis is to identify risk and opportunity. It is also preferable that the risk and opportunity found not be obvious to competitors. The traditional method cannot reach beyond the obvious. As a protection against risk, the method has proved ineffective, stemming from internal flaws that make it elastic. As a way to find opportunity, it is structurally blind to those that are not obvious. The primary focus in this article, however, is risk.

Losses in assisted living are not usually in the public record. Reasonable estimates best come from insiders. One insider, a past president of the Delaware Healthcare Facilities Association and a four-year member of the Board of the American Healthcare Association, was asked about the track record of senior-living development in recent years. He estimated that:

- 60% or more of the assisted living facilities constructed in recent years have failed to meet their goals.
- About a third have failed outright—many of which have been sold and resold at ever-diminishing prices.
- The actual cash losses of the original investors in the third that failed have been about 40% of costs.[3]



It appears that risk management, as currently practiced, is not working. Does the reader doubt that there is, in each failed facilities' loan file, a glowing traditional "site feasibility study" that says the project is financially sound? The next, obvious, questions should be: "How did we get here?" "Why are we doing this?" "Why should we continue?" "Is there a better way?" These questions have not been asked.

The Traditional Method

Survival through indifference. The traditional method has survived because no one has examined it closely. Inertia has

A Summary of This Series

Recently, assisted-living development accelerated unchecked by previous rules and restraints, leading to many failures and losses. The last line of defense against unworthy entry to the market became the market feasibility study. These studies use the old (subjective) traditional method of analysis—almost universal in senior-living lending approval. It fails at both goals of market analysis: Identify risk and identify opportunity. Of the three key functions of analysis, the method also fails at two: market boundary trace and demographic demand. By contrast, the method excels at analysis of the supply of competing beds. Unfortunately, one out of three was insufficient to avert losses. Instead of movement toward a better method, we continue "The Three-Cornered Hat," with apologies to composer Manuel de Falla and writer/diplomat/politician Pedro Antonio de Alarcón. "The Three-Cornered Hat" has become a fantasy dance played out by developer, lender, and analyst-each pretending that the old method works.

The second article invites the reader to test the idea of the first article—that traditional analysis is an unlikely source of risk protection. It provides examples of two common errors that systematically bias net demand upward. It asks readers to check the files of 1998 projects and ask "What would Jack Welch do?"

The final article suggests combining the skills of traditional analysts with the rigor of quantitative analysts. Disciplined quantitative techniques require considerably more effort, specialists, and resources than the traditional method and are thus more expensive. However, since they actually reduce risk[2] where the traditional cannot, they are more cost-effective. Quantitative techniques offer risk reduction through a fixed, not elastic, standard against which to measure a proposed project. They can find risk and opportunity that are invisible to the traditional analyst.

prevailed—in the form of developers' and lenders' sleepy, incurious acceptance of a method whose accuracy probably never existed and whose time is long gone. The widespread acceptance of the traditional method has inhibited analysts from reaching out to learn anything better. The implied assumption by analysts might be, "If this is what the loan officer wants, why fight it?"

Serious methodological flaws. The traditional method's serious flaws can be summarized as follows:

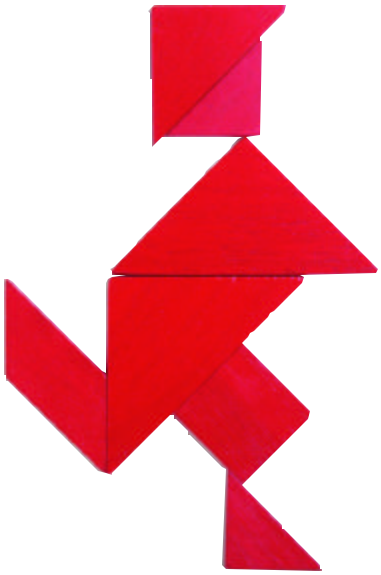
- It appears to be science but it fails such basic scientific tests as being replicable by an independent and qualified investigator.
- It loses track of modern complex markets because it does not use quantitative techniques that can follow the supply/demand impact on each block group. Instead, the traditional approach clusters many block groups (often hundreds) into one amorphous and undifferentiated blob, obliterating all nuances within the market area.
- It does not attempt to draw its demand model coefficients from inside the market boundary; moreover, sources for the coefficients are often questionable.
- Net demand computation contains significant errors that are biased upward, toward approval.
- It is unstable and supported on a logically unsound (circular) base.
- It commingles computation and estimation, making it difficult for a lender to separate fact from an ungrounded estimate.

In short, the traditional method's results are subject to manipulation by forces unrelated to the virtue of the project.

There are three parts to market analysis—market boundary selection, demand modeling, and supply modeling. The traditional method fails at the first two and is often excellent at the third.

Traditional analysts. This is not to say that traditional analysts are "bad." It is likely that few have seen the need for investing the years of effort necessary to lay bare the method everyone else takes for granted. It is not a trivial task to develop the skills to create a modern replacement. It is likely these analysts have concentrated on serving their clients.

Unfortunately, they also have made a poor choice of method and have been incurious about learning what can be more effective. It is now time for analysts to explain to lenders why such a method has any right to be the risk management standard of an industry.



New quantitative techniques that are now available can transform several processes:

- Valuing a site.
- Finding a financially viable site in an apparently picked-over area.
- Setting an optimum strategy for chain purchase and takeover.

Traditional analysts should not fear the new techniques, which pave the way toward new revenues, new and better services to clients, and, in the case of alliances with quantitative analysts, no need to upgrade staff or equipment.

The traditional market feasibility study. This type of study likely conjures images of daunting terminology, lots of numbers, and a 12-page appendix with endless demographic data supplied by a third-party firm. How could this not be rigorous quantitative research? The answer begins with another question: What, really, does a site feasibility study do? In the description that follows, basic economic terms are used for simplicity. The traditional method usually uses a penetration rate model, which raises more questions than it answers.[4]

- Determine a market boundary trace. Conceptually, like a chemistry beaker, everything inside a market boundary is counted and everything outside is ignored.[5] The signature weakness of the method lies in the way the market boundary trace is defined. If the trace is subjective, the entire study is subjective.

Traditional analysts often choose the boundary by either

drawing a totally arbitrary pencil trace on a map of about five miles in radius or by drawing a circle of arbitrary radius. Their selection is then supported by such descriptions as "psychological and physical" boundaries. The analyst trying to reproduce the chosen boundary is likely to have less success than those who tried to reproduce Cold Fusion.[6]

Traditional analyses are, therefore, inherently subjective in their most basic foundation, the market boundary. This one step makes the process subjective in whole. Any study built on such a boundary is nonreplicable, failing a fundamental test of being quantitative research.[7]

- Determine demand. A demographic model is used that is based primarily on census data from within the market boundary. Parameters may include: "...assume 5% of the people in the market area over age 84 will seek help; count only those who can pay." Even complex models rest on similar ideas.

A second glaring weakness of traditional analysts is that they tend to be arbitrary about selection of the demand model. They start with a blob of many block groups, masking internal differences. There is usually no attempt to draw demand data from within the market area or even from nearby.[8]

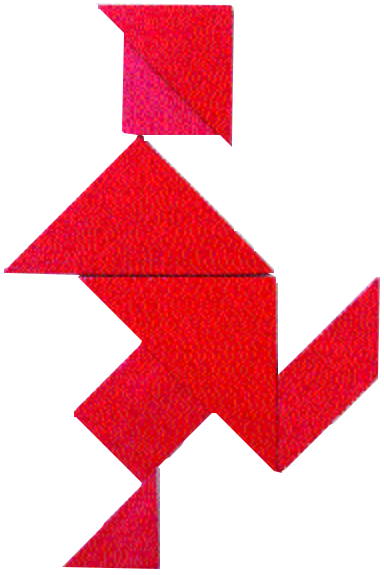
The coefficient used for the penetration rate is often explained as being derived from research, but it is normally not clear how the coefficient relates to the actual market being examined, nor whether the research is any more valid than the traditional method itself.

TRADITIONAL ANALYSTS OFTEN CHOOSE THE BOUNDARY BY EITHER DRAWING A TOTALLY ARBITRARY PENCIL TRACE ON A MAP OF ABOUT FIVE MILES IN RADIUS OR BY DRAWING A CIRCLE OF ARBITRARY RADIUS.

- Determine supply. Count the competing beds. Traditional analysts are normally excellent in this area because the process is rule-based, objective (counting the beds in the appropriate categories), linked to data gathered from within the market area, and reproducible.

- Determine net demand. The units are beds. Subtract supply (step above) from demand (two steps above).

- Determine financial feasibility. A traditional market study ends with a value for net demand from the market analysis at a given price range. Conventionally, the word feasibility means that the net demand has been used as an input number for a financial *pro forma*. The *pro forma* uses assumed numbers and relationships, usually drawn from national or regional averages, to determine if the proposed facility might be financially feasible.



- Summary: What, specifically, is the traditional method?
  - The foundation of the method is a nonreproducible boundary trace, chosen with no link to data on the ground within the market area.
  - A nonreproducible formula is applied to the (vague) area to determine the "market."
  - "The market" is then "penetrated" at some nonreproducible rate (often 5%).
  - It appears to be precise, but:

    1. Commingling of computation and interpretation blurs sources.

    2. Incorrect mathematical operations leave a false impression of precision. For example, the multiplying of arbitrary entities, "the market," by exact quantities (5%) to yield a number like 327 is highly misleading and has no basis in fact.

The Elastic Yardstick

Another problem arises from the traditional method. Because it is subjective, the results are an elastic yardstick.

For the loan officer, delving

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into one of these studies is intimidating. Interpretation and computation are often commingled, as explained later, under "a nasty secret."

The lender cannot easily ask, "Wait a minute. How do you know this? What is the evidence for this coefficient?" The answer may well be "I have 20 years of experience. Our firm has done 1,000 market studies. This is how it's done. Trust me." Too often, that is the end of the discussion.

There are alternatives to the elastic yardstick. Quantitative analysis using computers can deal with the millions of variables in current markets that swamp the traditional method. The quantitative portion of the analysis can be rule-based, reproducible, conceptually grounded, rigorous, and linked to data gathered from within the market area.

These alternative quantitative options offer a "fixed-length yardstick" for risk management and new ways to find opportunity to which the traditional method is blind.

The Fantasy Dance

This little dance takes place often enough to be recognizable to most readers. There are three dancers—the developer, the analyst, and the lender or investor.

A nasty secret. All three dancers know the secret. Almost any site can be made viable by moving the market boundary a little, tweaking a demand model, or adjusting a penetration rate factor. In the traditional method, judgment and computation are commingled, making small adjustments hard to detect. The process of reaching an answer is not transparent. This makes the process vulnerable to manipulation. All three parties know that the "site feasibility study" is an elastic yardstick.

Dancer #1: The developer. For the developer, it is hard to find a site. The possibilities have been picked over and owners are notoriously hard to deal with. Developers normally do not have sophisticated analytic techniques available to them and have come to be skeptical of the traditional method. Many developers—even those who wish to be warned of risk—see the site feasibility study as nothing but an administrative box to be checked off, providing no protection. It is simply a cost to minimize. If the analyst had a harder analytic core—a fixed yardstick—that produced a risk-reducing conclusion respected by the developer, then the site feasibility study might afford more protection. This is not the case.

Dancer #2: The analyst. Traditional analysts are in a weak position. Most developers see the traditional method as an opinion with few insights that are useful—a method unlikely to find the truth. As proof, a developer might point to at least a few analysts who will deliver a positive feasibility study on demand. Lacking a clear, objective base for saying either yes or no and having a method that is often (by incorrectly overestimating demand) biased toward approval, the analysts say yes too often. Since the method is elastic, the most important theme for the analyst may be "Analysts can be replaced."

Dancer #3: The lender. The lender knows all this, of course. Even though many loan officers do not see the site feasibility study as significant protection against risk, few would want to incur criticism by dropping the requirement for one.

- Almost all lenders would welcome an alternative method of analysis—a transparent one that does not commingle analysis and interpretation.
- Most lenders would be delighted to see a two-step process, providing a computational estimate using the same rules for every site (a fixed yardstick, the "instruments" for the "pilot"), and then—out in the open—applying the best judgment to reach a final recommendation. That hasn't happened, so lenders seek personal guarantees. However, guarantees may or may not be collectible, and they may, or may not, repair the reputation of the loan officer.

Analysts' reputations have suffered. The fantasy dance con-

tributes heavily to the losses described at the beginning of this article and to the decline in the credibility of the traditional market analysis as protection against risk.

Developers now often view a study as a cost to minimize, not as a source of a knowledge advantage that can bear financial fruit. Not surprisingly, many analysts' offerings have diminished to little more than site feasibility studies and refinancing work, all at ever-declining prices. The industry needs better, more precise analysis because real opportunities still exist. These alternatives will be discussed in the third article.

Conclusion

Lenders and developers should reconsider the wisdom of "saving money" by paying ever-lower prices for market analyses that do not protect against risk. With $400 million out the door from 1998 development, wouldn't it have been preferable to have had better odds? What is the value of an analytic method that can save a significant part of those losses? What is the value of the current method?

Mistakes have been made, large losses incurred, and opportunity lost. Lacking quantitative tools to find appropriate pricing, many facilities were developed to serve a price range where the net demand was already actually negative (a fact perfectly visible to quantitative techniques, but invisible to the traditional method). This left fallow many opportunities to build more modestly priced facilities, located in "unlikely" areas that are not apparent to the traditional analyst.

LACKING QUANTITATIVE TOOLS TO FIND APPROPRIATE PRICING, FACILITIES WERE DEVELOPED TO SERVE A PRICE RANGE WHERE THE NET DEMAND WAS ALREADY ACTUALLY NEGATIVE (A FACT PERFECTLY VISIBLE TO QUANTITATIVE TECHNIQUES BUT INVISIBLE TO THE TRADITIONAL ANALYST).

Traditional analysts are not chained to their method except by choice. Alliances with quantitative analysts that do not threaten traditional-method analysts' existence are already at hand. Traditional analysts no longer need to cling to a diminishing business of dubious value, kept alive only by loan officers' hesitation to close a requirement that no longer serves the purpose for which it was created. Alliances can open new opportunities, promising expansion of the traditional analyst's business offerings. New types of analyses (comparison, area, and chain-takeover simulations)—presently beyond the reach of traditional analysts, yet can require no additional staff—are of much greater value to the client than single-location site studies.

We don't suggest that the pilot—the analyst of the opening example—retire. We simply propose that he or she acquire a set of instruments that works.

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Notes

1 Ray A. Smith, "Assisted-Living Firms Offer Incentives to Fill Oversupply," Wall Street Journal, April 18, 2001, states 1998 construction was 32,700 units. Typical construction costs run $80,000 to $100,000 per unit; assume $100,000. Total investment: $3.27 billion. The Boyer estimate (see footnote below) is that 1/3 failed outright and, of the failed investment, 40% represented actual cash losses. Thus, ($3.279)x(1/3)x(.40)=$435,000,000.

2 Later articles discuss values for r^2, a measure that quantifies the degree of "explanation" of a variable. The value of r^2 for the traditional method is zero.

3 Bruce E. Boyer: "...that is merely an estimate, I have no exact statistics, and don't know if any are available. If you look at the number of companies that have tanked, those estimates may be conservative."

4 The weaknesses of the traditional method's penetration rate model are discussed in later articles in this series.

5 This example is simplistic for the sake of showing method. Some analyses use multiple market areas; all make assumptions, some grounded in data and some not, about what lies outside the boundary.

6 Many analysts, when confronted with this observation, respond that it does not matter where the market trace is drawn because supply and demand will "balance." This argument is not persuasive. There is no law that says if a boundary is moved, there will be no net difference between supply and demand. In fact, there is considerable empirical evidence to the contrary. Often, the analysts making this argument have made the opposite argument in their "studies," saying that "...selection of the market boundary is the most important step."

7 Circles are replicable, but in the hands of many traditional analysts the radius is not, nor is it derived from data within the market area.

8 Not every market contains facilities that closely approximate the intended development. There are practical considerations when one goes into the field to draw data. It is recognized that adjustments need to be made in some cases. Sometimes it is appropriate to use data drawn from a similar facility in a market area that has similar demographics. Whatever choice the analyst makes, it is appropriate to make it explicit in the report.