

# Measuring Success In The ICE Age

*by John Starke*

How do you measure success in housing finance? This question deserves special consideration in today's rapidly changing market. A popular characterization of the current technology revolution is the ICE Age – the Internet Changes Everything!

Even without the Internet, the housing market is rocked by change. The changes are coming so fast that it is difficult to keep the list current. Consider the following:

- Management science has provided new analytical approaches to credit and interest rate risk management (credit scoring and portfolio analysis). Firms that adopt these tools are able to lower their cost and their risk premiums for mortgage lending.
- Declining trade barriers lead to more cross border competition. The American experience with this process in the last thirty years shows that many local firms do not survive, and new niche lenders appear.
- The secondary market increases borrower choices by giving a range of products that are difficult for a typical thrift to offer.
- New alliances between firms that were previously thought to be unrelated, e.g., Microsoft and Freddie Mac.
- The costs for some types of loan operations (origination and servicing) can be decreasing, while other types of operations require more labor and thus face rising costs.

Management has so many opportunities and threats that it is difficult to know which new idea to grasp. Which ever set of new strategies a lender may try, it is very important to measure and understand how the lending processes respond. Over the years, lenders have developed a variety of measures of their own success. There is a new urgency to rethink those measures and how they are used.

## **Finding a Better Picture**

Traditional measures of lender success tend to be at a high level. Financial statements report profits and net yield on a portfolio. Operating reports show loans per employee. Customer satisfaction surveys reveal problems. Mortgage origination measurements could include processing time, number of employees, and errors in the process.

These measures are fine, but a mortgage lender needs a better picture of operating processes. This means the control system should regularly gather hundreds of measurement! With the low cost of computers and cheap database software, lenders can now keep track of these measures and give employees

feedback in real time. Using statistical process control techniques on a measurement system will drive changes within the organization.

Concepts like statistical process control can seem to be abstract and appropriate for manufacturing, but strange for housing finance. Here is an example of to apply statistical process control to loan origination.

For the last twenty years, secondary market investors and the Federal Housing Administration (FHA) have required American mortgage lenders to review a sample (10%) of loan files for completeness, underwriting and documentation – a classic quality control application. The original motivation was to detect patterns of fraudulent origination.

Lenders created independent in-house quality control groups, and also outsourced some of the reviews (a market developed for firms to provide this service). In addition to reporting whether the reviews detected fraud, the review process reports the findings of lesser errors (e.g., incomplete documentation, borderline underwriting). A typical monthly quality control report lists the number of loans originated, the number reviewed, and a summary of the types of errors found.

Since the primary purpose was to identify fraud, the relatively low incidence of fraud meant that the reports were treated as exception reporting. But there was valuable information that smart lenders used to increase profits and market share.

### **Finding Unnecessary Costs**

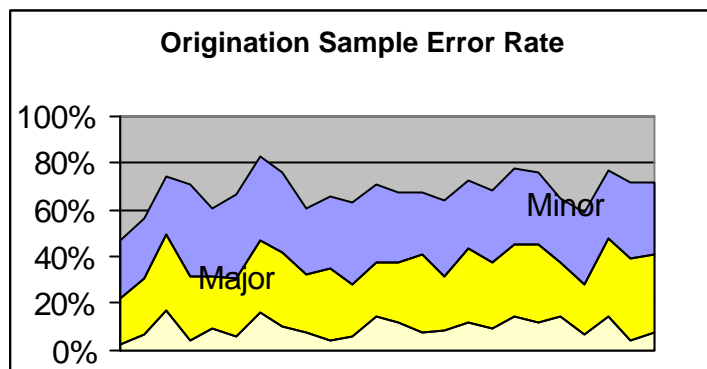
As a consultant, I have had the opportunity to review many lenders' operations. One of my most important measures was how management used the quality control reports.

The experience at one company is illustrative. I asked for several years of the quality control reports, and I got a two foot high stack of documents. The quality control department had already separated the errors into three categories:

- Underwriting – The review underwriter questioned the original underwriting judgment or wanted more information to make a decision.
- Major – An error that requires fixing before delivering the loan.
- Minor – Not in conformance with procedures, but does not affect sale of loan.

There was no finding of fraud in any of the samples reviewed. I summarized the relevant data in a spreadsheet and plotted the percentage of monthly error rates for three categories of errors (see graph) for the twenty-four month period.

Later, I discussed the quality control reports with the president of the company. He stated that the reports were very important; he read them every month, and he always took quick action if there was any indication of fraud. His focus was on using the quality control reports as exception reporting.



I showed him the graph. The incidence of underwriting errors was low (at the bottom of the graph), but steady. The major errors, requiring some type of rework averaged over thirty percent. Over sixty percent of the loans in the sample had some problem. The problem was not just that some loans in the sample had errors. The samples indicated that all of the loans originated had high error rates.

Eventually those errors had to be fixed. The cost of fixing the loans included not only the labor cost, but also any costs from missed delivery to investors. The lender suffered unnecessary operating costs because it failed to analyze and understand its own operating processes – even when it had a basic measurement system.

The percentage was relatively stable each month, as demonstrated by the measurement points being within three standard deviations of the average (i.e., the variation around the mean was small). This statistical fact is important.

The errors are not the result of random employee error. The employees were doing the best job they could and they were doing exactly what management wanted. The management control for loan processing was designed to produce loans with a thirty percent major error rate!

To change the percentage of defective loans, management had to change the control system.

The control system includes operating procedures, review procedures, training, selection of outside vendors (appraisers, credit bureaus, title companies, etc.) and the feedback that employees get on their performance. In the terminology of statistical process control (SPC), stable processes can only be improved by management change.

Many American lenders have heard this message. Using other standard analysis tools, lenders have taken charts like these to point at the causes of the errors. That knowledge leads to process reengineering. But, the quest for improved processes does not stop with one round of reengineering. As in every other business, management should commit to continual improvement. You must

continually improve your processes because your competitors' processes will not stop getting better.

The best mechanism to get management's attention in process improvement is to measure as many aspects of a process as possible, and to have a regular discipline using that information to improve. This approach has had many names as waves of management fads have repackaged the basic concept. I still like the term statistical process control, although other terms apply.

### **Confronting Change**

The experience of many industries, including housing finance, has shown that tools that reduce costs and improve quality increase the odds of survival.

Create a system that measures the first order performance (error rate or process time), then use the data to improve the process. It is all right to start small.

Eventually, you would like to have hundreds of measures of processes, and give the results to the employees in real time. Each measure gives a different view of the process.

Computers are relatively cheap, and spreadsheets have many tools for data analysis. A little effort collecting data and turning the data into information can pay large dividends.

The many changes coming make this one of the most exciting and stimulating times to be in the housing finance market. Using the proven technology of statistical process control will not only improve existing operations, but also help you to deal with the problem of change.

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