

NABIL RAAD

NAVF: Organizational Barriers to Implementing Optimized Transactional Pricing in Indirect Lending

In early 2010, Bruce Blankenship, the president of North American Vehicle Financing (NAVF) asked Stuart Watterson, Director of Risk Management, to take over a strategic project that had been in a state of paralysis for over two years. NAVF specializes in providing automobile dealers with access to consumer loans that they offer to potential car buyers in order to facilitate vehicle sales and financing at dealerships. In 2007, NAVF started facing intense competition from other financial institutions and was losing market share and loan volume (**exhibit 1**). To address this threat, the organization wanted to improve its ability to set the interest rates it offers on car loans. The management team concluded that pricing loans more analytically is critical to the future success of NAVF.

Project Background and Challenge

The goal of the project was to implement optimized transactional pricing capabilities aimed at increasing Return on Equity (ROE) by improving how NAVF determines the interest rates it charges automobile dealers on consumer loans that they offer to their customers. The goal of optimized pricing is to maximize a business measure such as profits or loan volume by providing the right price at the right time for every product to every customer segment through every channel. Transactional pricing means that the interest rate of each loan is determined individually for each loan application based on specific customer, contract, and vehicle attributes. Establishing optimized transactional pricing capabilities is a complex analytical task that requires the development of consumer price elasticity and profit models. Generically, a price elasticity function specifies demand of a product sold by a seller as a function of the price offered by that seller. The concept is equally applicable to evaluating the price-demand relationship of vegetables, cars, or interest rates. Because price elasticity includes a measure of a customer's willingness to pay, consumers with similar credit risk profiles could be charged differently based on their willingness to pay. This makes price fairness perceptions an important consideration for organizations seeking to implement pricing capabilities that are based on price elasticity measures.

Stuart Watterson had just returned from a four-year assignment to Europe and was not familiar with the details of the project. However, he was trusted and respected by many in the organization. He also had extensive experience in transformational initiatives and was well-known for his objective style, humility, business experience, analytical orientation, and practical approach to business. Bruce felt confident that Stuart is the right person to evaluate the viability of the project.

Yet, as Stuart walked away from Bruce's office, he kept thinking with concern about a few statements that Bruce made during their conversation.

"...Stuart, I've seen the way price optimization has reduced margins in the airline and hospitality industries. With our cost of funds being uncompetitive, we can't afford to fight a price war with the competition. At the same time, our market share continues to shrink and we have to do something."

“...I’m very concerned about the potential negative impact of this project... We have to do it right or I think we will suffer serious financial implications... not to mention reputation risk because of possible perceived lack of fairness in pricing... Also, we could face severe financial penalties if this practice is found to be discriminatory in nature...I’m sure you’re aware of the increased regulatory scrutiny following a major class action lawsuit that hit the industry last year. I’ve shared my views with my direct reports at the beginning of the project and I need you to make sure that we proceed carefully.”

“Do we have to implement optimized transactional pricing? Can we improve our pricing competitiveness using other strategies that are not a black box approach like this one?”

“...Either find a way to show unquestionable benefits, find another strategy besides price optimization, or kill the project. If you decide to proceed with the project, you have 10 months to fully implement in all markets it but I need to know within a month if the project is viable because I don’t want to wait more than 30 days to terminate it if that’s the right course of action. I have a meeting with the board in 2 months and I would like to be able to communicate a firm position on the project.”

Bruce concluded by saying “Stuart, we are a relationship-driven business and we have many stakeholders involved here. We can’t afford to damage the cohesiveness of the team... It’s not easily repaired and we could end up with bigger problems...”

As soon as he sat down in his chair, Stuart reflected on a few notes he took during his conversation with Bruce. One of the notes said “How did we get to this point?” He personally knew the majority of the players involved in this project and they were all experienced and competent individuals. He thought to himself, “How can a group of accomplished decision-makers let such an important initiative flounder for so long without someone taking a decisive action? Why does it seem that they were willing to tolerate a state of paralysis?”

Stuart was anxious to begin a fact-finding mission and retrace the steps and decisions made so far. He wrote “Finance, Risk Management, Operations, Sales, Marketing, Strategic Planning, Information Technology, and Legal”. These were the functions he needed to talk in order to capture the perspectives of the different stakeholders who have influence and power over the project’s approval and implementation.

Company Background

North American Vehicle Financing (NAVF) is the indirect automotive lending arm of Credit International Bank (CIB), a major financial institution headquartered in North America with over \$130 billion dollars in receivables and operations in over 70 countries. NAVF operates in the US and Canada and has 17 billion dollars in receivables and over 650,000 customers who have financed new and used cars across all makes sold in North America. NAVF has traditionally been a profitable business for CIB but profits have declined by more than 10% over the last three years (**Exhibit 2**). The organization has over 1,300 employees distributed between headquarters, two operating centers, and dozens of home-based sales staff.

The financial services offered by NAVF fall into two major categories designed to help automobile dealers finance their operations, improve sales effectiveness, and provide an additional revenue stream. The first category is referred to as wholesale financing and involves financing the inventory of new and used vehicles that dealers hold in their lots at any point in time. The second category, retail financing, allows dealers to provide financing to car buyers by acting as an intermediary to financing sources that offer automobile loans such as NAVF, Chase, and Wells Fargo. The scope of the

NAVF optimized transactional pricing project was limited to retail financing only and excludes wholesale financing.

There are eight senior executives that report to Bruce Blankenship, the president of NAVF. They include Finance, Operations, Risk Management, Sales, Marketing, Strategic Planning, Information Technology, and Legal. Although Finance is responsible for managing the pricing process, Sales is considered the owner because they are responsible for achieving ROE targets. As such, all critical pricing decisions must be ultimately approved by Sales. Strategic projects, such as optimized transactional pricing, are initially reviewed and approved by the Operating Strategy Committee (OSC), which is chaired by the vice president of Operations and includes the remaining seven vice presidents from the other functional areas.

Direct Lending vs. Indirect Lending

In a direct lending environment, car buyers apply and obtain financing for the vehicles they purchase directly from a bank or credit union. In this scenario, the car buyer applies for credit at the financial institutions directly without any involvement from the automobile dealer. When the vehicle is purchased, the financial institution pays the dealer the sale price and secures its interest in the vehicle through a lien.

In an indirect lending channel, the financial institution provides automobile dealers with a rate or pricing sheet, which is a menu of interest rates based on customer and loan attributes such as credit score and term of contract. The rates offered by finance sources in an indirect lending channel are called dealer rates because they will typically differ from the final rate offered to the customer, which is called customer rate.

When a consumer fills an application to finance a vehicle through a dealership, the Finance and Insurance (F&I) manager at the dealership forwards the application to several finance sources to obtain credit approval and corresponding interest rates. Each finance source will evaluate the credit risk of the application and determine the appropriate interest rate to charge. This process works like an auction where finance sources are bidding on car loan applications that are made available to them by F&I managers at automobile dealerships. In general, the F&I manager will mark-up the rate obtained from finance sources before offering it to the applicant, thus creating a revenue opportunity for the dealership. To support this important source of profits, the compensation structure of F&I managers is designed to provide them with an incentive to maximize financing or mark-up revenue for the dealership. This process is also similar to a reseller buying a product from a manufacturer and then re-selling it to a retail customer at a profit. For example, if a finance source offers the F&I manager a dealer rate of 4.5% on a specific application, the F&I manager can potentially offer the financing to the car buyer at 5.5% and retain one percentage point difference as financing income. F&I managers may not always select the lowest interest rate offered by competing finance sources because there are two additional factors that they must take into consideration. Firstly, they must balance the need for the lowest possible rate with the need to maintain a few core healthy relationships with stable finance sources. Financial institutions have regularly entered and exited the automobile financing sector and it's important for dealers to have access to several reliable sources of vehicle financing. Secondly, F&I managers must also balance the objective of generating financing revenue for the dealership with the goal of selling the vehicle. If the F&I managers adds too large of a mark-up over the interest rate offered by finance sources, this could jeopardize the vehicle sale as the customer might then be more motivated to visit another dealership. In some cases, dealers mark down rates and pay for the difference between the dealer rate they receive from a finance source and a lower rate that is demanded by a customer, if this help with selling the vehicle.

In an indirect lending channel, the car buyer may not know the financing source until the paperwork is complete as some buyers are more interested in monthly payment affordability. Because F&I managers interact face-to-face with the car buyer, they are typically able to obtain information about the customer that may not be available to the finance source through a loan application. This information asymmetry between the dealer and the finance source about the car buyer gives the dealer an advantage when negotiating for lower rates with the finance source. F&I managers are typically astute about being able to assess the customer's interest rate sensitivity through face-to-face interaction. Prior to the implementation of price elasticity in pricing models, most financial institutions priced their loans based on the customer's credit risk. However, there are many low credit risk customers who are willing to pay higher interest rates because of convenience reasons.

Organizational culture

At NAVF, goals are developed using a highly consultative approach and positive relationships are highly valued and preserved. Individualized decision-making and unilateral action by one function or an individual is not favored. As a result, proposals take several months of debating before a decision is made. In the process, what is implemented might be different from what was originally proposed. Project managers spend considerable amount of time selling ideas and generating consensus in an effort to reconcile a variety of functional objectives that sometime seem contradictory. Typically, the Sales and marketing functions are more interested in meeting ROE and market share objectives while the Finance department is more focused on profitability and operating costs numbers. By contrast, the Risk Management function is largely interested in reducing credit losses.

Decision-making is a slow process at NAVF, not only because of the consensus orientation of the organization, but also because decision-making is hierarchical. Yet, the organization is well known for its highly structured and efficient operations. All processes are heavily documented and it's hard to find a process that does not have volumes of documentation on who to execute it. Processes at NAVF are well defined, repeatable, rigid, and deterministic. There's little variability in process execution, whether the process is customer-facing or part of back-office operations. The organization is continuously involved in fine-tuning its established processes through lean practices. However, the emphasis is on making existing processes more efficient as opposed to reinventing them.

The Corporate Project Management Office (CPMO) is well established and has over the years developed rigorous processes and policies for managing complex projects. Project managers can draw from a wealth of best practices and the organization has developed knowledge management databases that capture historical information on project plans, lessons learned, and other project related artifacts. It can be argued that project management practices are also repeatable, rigid, and well structured.

The NAVF culture is very insular and it's rare for the organization to accept new employees from other organizations to a management rank. For the vast majority of employees, working at NAVF was their first job and they have been with the organization ever since. Furthermore, people are expected to behave in a specific way to become accepted. Demonstrating disagreement in public is not viewed as a good leadership trait. Most meetings are very cordial as people typically communicate their disagreements in private and resolve issues behind closed doors. If an individual is deemed unsuitable, he or she is given peripheral assignments and left to their own to quit. As a result, the organization has few individuals who are just satisfied with just providing the minimum effort required. Another aspect of the culture is that there's a generalist bias where status is given to those who have completed assignments in as many functions as possible. For many, the goal is to remain in a role about 2 to 3 years and this has resulted in a lack of technical depth in some areas

Industry context and competition

The automotive financing sector is highly competitive due in part to web-based credit aggregation systems that allow dealers to enter a retail credit application once and send it to multiple finance sources for bidding on the rate. Typically, the winning bid is the lowest rate but other factors such as long-term relationships, consistent availability of financing, and maintaining a diverse source of financing sources are key factors as well. NAVF competes with banks, credit unions, independent finance companies, and the finance arms of manufacturers.

The automotive financing business is undergoing a fundamental change in the way finance rates are set and advertised. The accepted process has been based on finance sources providing dealers with rate sheets, which is akin to a menu of dealer interest rates associated with different customer risk levels and loan term (**Exhibit 3**). A rate sheet is a grid where columns represent credit risk categories and the row loan term bands. Each risk and loan term intersection is called a pricing cell and contains a dealer rate that helps NAVF's achieve its margin requirements. In the US, risk level is generally measured using the FICO score, which is a consumer credit assessment generated by a statistical model that takes into account a person's payment history, credit capacity utilization, length of credit history, and other related factors. The score is developed by the FICO Company.

The transactional price or rate of a financing transaction is the final customer rate as stated in the loan agreement. Historically, the average transaction price was slightly higher than the average dealer rate published in rate sheets. This was expected because the transactional price reflects the mark-up effect of dealers. Starting in 2007, effective transactional prices started trending lower than rates published in rate sheet. As of 2010, the average transaction price was 250 basis points (or 2.5 percentage points) lower than the average dealer, as compared to 20 basis points in 2007 (**Exhibit 3**). This suggests that automotive finance sources are not updating their published rate sheets, thus signaling a move away from this practice. Instead, they are increasingly engaged in transactional pricing where the interest rate is determined and communicated to the dealer on a transaction by transaction basis. Rate sheets have become less relevant over the last few years and it's likely that they will be completely phased out in the next 5 to 10 years, if not sooner. The main driver behind this trend is that financial institutions are recognizing the power of optimized transactional pricing as a way to increase profits in a highly competitive industry where margins are thin and loan services have become a commodity that is difficult to consistently differentiate.

Pricing Cycles: Legacy Pricing Compared to Optimized Transactional Pricing

A comparison between the legacy pricing process **Exhibit 4** and optimized transactional pricing **Exhibit 5** is provided next. It's convenient to think about the pricing process as a cycle being composed of two main phases with a feedback loop from phase 2 to phase 1. The first phase involves generating dealer rate sheets while the second describes how rate sheets are used by dealers. This phase also describes how results are monitored by NAVF Sales and used to trigger adjustments to rate sheets, as needed.

In phase 1 of the legacy pricing process, NAVF sets rates based on a cost-plus basis. Using this approach, the organization determines its total costs, which are primarily composed of funding, operating, and credit loss expenses. It then adds a margin that helps achieve a return on equity target mandated by the business plan. Funding cost, also known as borrowing cost, is the interest rate NAVF pays on money

it borrows so that it has funds to lend to car buyers and dealers. Operating costs are related to the day-to-day operating expenses of the company and include items like salaries, supplies, building maintenance, and supplier fees. Credit loss cost is money that NAVF loses because some car loan borrowers fail to repay the borrowed amount. All costs are allocated by market, credit risk level, and loan term and are reflected in pricing loans. When a decision is made to update the dealer rate sheet, the pricing process begins with a Financial Analyst in the Finance department generating a two-dimensional rate sheet with a rate in each pricing cell. The rates are computed on a cost-plus basis using the latest cost data and business profit objectives. As stated earlier, a pricing cell represents a homogenous set of loans with similar risk and term characteristics. The Financial Analyst generates a rate sheet for 31 markets and forwards them to the corresponding Sales Manager for review. Because Sales Managers are accountable for achieving ROE targets, they will typically adjust certain pricing cells to reflect their market knowledge and competitive dynamics. For example, if Chase is offering a low rate for a specific loan term, the Sales Manager may choose to match it if the NAVF cost-plus rate is higher. To accomplish this, the Sales Manager must increase the rate in another pricing cell in order to maintain a pricing structure that can achieve the desired ROE. When Sales Managers complete their judgmental adjustments, they upload the rates sheets to a system that makes them available to dealers for viewing.

In phase 2 of the legacy pricing process, dealers manually look up a corresponding rate in the rate sheet based on customer risk and desired loan term. In addition, when dealers call NAVF to negotiate a rate, the credit analyst uses a judgmental approach to determine the magnitude of the rate reduction, as applicable. Once new rates become effective, Sales Managers access daily, weekly, and monthly reports to monitor performance and determine if booked loans have an average expected ROE that is consistent with target. This is a critical step for Sales Managers because they need the reports to be updated daily and made accessible remotely as they spend most of their time visiting dealers. The decision to update pricing is typically triggered by a change in borrowing costs, competitive action, or a desire to change the ROE target.

Optimized transactional pricing introduces several changes to the process and was implemented in 5 markets. It provides a highly analytical approach for setting rates and an automated platform for rate delivery to dealers. The goal is to provide a more accurate rate that maximizes NAVF's profits while making dealer rates instantaneously available upon application entry, thus enhancing dealer satisfaction with the rate delivery process.

Optimized Transactional Pricing does not generate a rate sheet and therefore eliminates the role of Finance and Sales in generating rate sheets, as described in phase 1 of the legacy pricing cycle. The new process begins when a dealer submits a loan application through the credit aggregation system. Next, the NAVF underwriting system extracts customer, contract, and vehicle attributes and sends them as inputs to the Transaction Price Optimization engine. Customer attributes includes risk level, price sensitivity score, payment-to-income, job history, and similar items. Contract attributes describe the structure of the agreement and includes loan term, down payment, and expected profitability and ROE. Vehicle attributes are largely concerned with the value of the collateral as represented by depreciation rate, add-on features, and vehicle age in the case of used vehicles. The Transaction Price Optimization engine acts on the above inputs and generates an optimal rate that considers the aggregate all of credit decisions made so far this month. The optimization contains a variety of constraints such as achieving a minimum ROE number and maintaining a specific risk level for all contracts booked. The Transactional Price Optimization engine considers the marginal contribution that an additional loan will have within an optimization objective.

Under Optimized Transactional Pricing, the rate delivery process to dealer becomes entirely automated. When dealers submit loan application through a credit aggregation system, they receive a rate in less than one second. Dealers can still contact NAVF credit underwriters to negotiate better rates. However, the decision process is far less judgmental and more consistent because underwriters use an

optimization facility to provide analytically-driven rate reductions, as needed. What remains unchanged is the need for the Sales managers to access underwriting performance reports to monitor expected ROE relative to target. The optimized transactional pricing platform replaces current reporting capabilities with more advanced reporting and user interface features that are unfamiliar to most Sales Managers. To many users, the usability of the reporting functionality of the new system is poor and response time is too slow relative to the legacy implementation.

Capturing the Perspectives of Major Stakeholders

By discussing the project with each of the major stakeholders, Stuart wanted to understand the actions and circumstances leading to the current project state. He was hoping that this would help him understand why the project stalled.

Strategic Planning Perspective

The first person that Stuart met with was Frank Mignon, head of strategic planning. Frank had originally proposed the idea of implementing price optimization for transactional level pricing in early 2007 after reading about it in an industry research report about emerging trends in the financial industry.

As Stuart entered Frank's office, Frank greeted him warmly and said "I'm glad that Bruce asked you to take care of this project because I believe it will strengthen our ability to price smarter. I fully support this initiative and would like to us to see it implemented."

Frank described how he worked with Finance and Risk Management to evaluate the leading vendors in Price Optimization. He said "We wanted to go with an outside vendor because our analytical team did not have the necessary experience to develop the solution themselves, at least not in a timely manner. We felt that if we were to use a vendor for the first few years, we could gain valuable experience and eventually develop the next generation solution in-house."

Stuart asked Frank about what criteria were used to select the vendor. Frank replied "Well, we evaluated five vendors based on four main capabilities; analytics, pricing process workflow, reporting, and "what-if" analysis. We also needed a vendor who is willing to customize the solution to our needs. Quite frankly, we were not very sure about our requirements and we therefore wanted the flexibility to learn and adjust..."

During the conversation, Frank indicated that Helen Diras, the previous VP of Finance, was the visionary behind the initiative and that she played a key role in getting the organization to agree to launch the project. He added that Helen wanted pricing to become a competitive advantage and that she was the driving force behind it. However, less than a year after the start of the project Helen was promoted to the CFO position at CIB. Frank concluded his remarks about Helen by saying "Helen's reputation as an innovator was well known and it was only a matter of time before she got promoted and moved to the parent company of the bank. I personally think that she could be the CEO one day. Indirect lending is only a part of the business and I'm not sure if many high potential people spend their entire career here... They just come here for the Indirect Lending experience, as you know..."

Frank continued "We narrowed down the list to two vendors and asked each one to use actual data to help us determine the potential increase in profits. The vendor we selected developed a more convincing approach about potential benefits. Plus, their software capabilities were more polished than the other vendor. In the end, Helen and I selected the vendor and signed a four-year agreement at a cost of \$1.4 million per year."

“If you want to talk to Helen, let me know and I can arrange a meeting. We go back a long way and she will make herself available in a second if I ask”, added Frank.

“How did you plan the rollout?” Stuart asked. Frank replied with a confident tone “Although we believed that we selected the right vendor, we wanted to pursue a phased approach. In phase I, we implemented the solution in 5 out of 36 markets. Our thinking was that let’s establish the benefits on a smaller scale, learn, and then continue with a gradual expansion. The plan was to compare profits in the 5 pilot markets before and after implementation. Similarly, we would compare profits in the remaining 31 markets. This provided us with a control mechanism that the key stakeholder felt comfortable with.”

Frank became visibly irritated as he continued, “The problem was that we never came out of phase I and we are still trying to demonstrate initial marginal benefits. I’ve been heavily involved in other initiatives and have not been close to the implementation but our sales team is concerned and they are not convinced that the benefits are real. Also, I don’t know if our analytical team is doing a good job in analyzing and communicating the results. You know, they are still learning.”

As Stuart was leaving, Frank asked him to attend the price optimization project steering committee, which meets every other week. This cross functional committee was formed at the beginning of the project to help guide development and implementation strategy. The committee’s charter stated that its purpose is to “Steer the development of pricing tactics and strategies in support of business objectives”. Quorum required that directors from Finance, Operations, Sales, Marketing, Risk and IT attend each committee meeting. In cases where Directors are not available, representatives are requested to ensure that each function is continuously represented.

The Sales Perspective

Next on Stuart’s agenda was Tony Penneli, Director of sales. Stuart knew that Tony’s boss, the VP of sales, was not engaged in this project and relied on Tony to call the shots for the Sales department. After working at NAVF for over 30 years, Tony was respected for his understanding of the business.

“What should I be worried about with this project?” Stuart asked Tony who took a pensive look as a deep frown developed on his face. “Look Stuart, this project is a joke. Here we are more than two years into it, not to mention several million dollars spent, and we struggle to understand if it’s helping us improve profits.”

Tony continued, “Our Sales people know their markets and they’ve always done a good job setting dealer rates. Trusting this process to a black box that no one understands, or can at least explain to me in plain English, is not acceptable. You see, the pressure is on me to deliver ROE targets. Competition is intensifying and we can’t afford any mistakes. We keep calling this solution price optimization but can we really find an optimal price? It sounds too good to be true. Besides, I wonder how much leverage or choice we have because we just have to follow the market...”

Stuart asked Tony “What are the results in the pilot markets?” Tony replied “We are seeing similar results to what we have seen in the past and I can’t tell where the added value is... Treatment and control markets are not very comparable because of different demographics and competitive forces. Our president has reservations over expanding the scope to additional markets without definitive proof of incremental benefits. I need the Analytics team to come back with a convincing story. They tell me we need to use the solution in more markets so that we have more data to improve the analytical models but I’m not sure this is such a good idea... Here, look at the results yourself (**exhibit 7**).”

“After one year, we are seeing negligible improvements in ROE, expected profit per loan, and loans booked as a percent of approved applications... There’s no strong evidence of meaningful benefits and I don’t have a lever to adjust in case something happens in the market. This is like flying an airplane on auto pilot only. If we run into bad weather, the pilot will not be able to fly the airplane because there are no controls...”

“If the results were substantially positive, it would be a different story... Analytics tell me that the models will improve over time the more we use them... That’s fine but I’m not inclined to expand the scope...”

“Stuart, I think that you are well aware of the concerns that our president has about this project”, reiterated Tony.

“There’s another concern” continued Tony. “The system’s performance is very slow and the Sales team is always complaining that this is slowing them down. As you know, the sales team needs to monitor the ROE of booked loans against targets and, with the reporting facility that they had access to previously, they could pull a report in less than 5 seconds. The Sales Managers meet regularly with dealers and they discuss ROE performance using dealer reports that they generate while on the road. Today, if they need to run a report, it takes more than 15 minutes for results to appear and, when they are visiting a dealer, it basically does not allow them to do their job. Sometimes, the reports just freeze. I don’t know what it is but after the vendor modified the software to our needs, it’s become slower. You might want to talk to IT because they can give you more details. I need a simple report and they want to give me the plans to the space shuttle...”

“Who is addressing these concerns with the vendor?” asked Stuart. Tony indicated that there there’s a supervisor from Finance looking into this.

The Finance Perspective

Mike Aspen is the Finance supervisor and the person with the most hands-on experience with the project. After Stuart talked with Mike’s management, it was clear to him that they left all decision-making and recommendations to Mike.

“What are the challenges that you’re facing with the price optimization project?” asked Stuart. Mike was a serious individual who rarely smiled. He paused for a few seconds before replying. “I think that the first challenge is that we are making too many changes and the vendor is having a difficult time supporting the number of requests in a timely manner. They are a small company and don’t want to lose us as a major customer. So, they are eager to accommodate us...”

Stuart asked Mike “How will this project impact Finance’s role in the pricing process?” Mike replied with a bit of hesitation in his voice “When this project is fully implemented, we will no longer have to generate rate sheets because they will be generated automatically based on the analytical engine”

Stuart asked, “But why can’t we demonstrate incremental benefit?” Mike replied “I think that the software works well analytically and I’m puzzled by our inability to move forward... I’m not sure if people are taking the time to understand the solution. It’s complicated but it’s not rocket science... Helen had originally envisioned this pilot as a way to establish short-term wins but it seems that this approach has back-fired... We can really move the needle with better pricing but maybe we have different definitions or expectations of what success looks like. Do we want to hit targeted ROEs, maximize profits, or maximize loan volume? I’m not sure if we can have it all...”

Mike continued “The previous Finance supervisor was the one who implemented the system and managed the project hands-on at the beginning. He led the implementation of the pilot and was extremely knowledgeable about the technology and has even implemented it in a previous job... but he left about eight months ago and joined a competitor... I’m doing my best to keep the project going and take care of my primary job...”

“What happened with him” asked Stuart. Mike replied with a hesitant voice “He grew frustrated that his views and advice were not being considered...”

After meeting with Mike, Stuart scheduled a meeting with David Heath, the VP of Finance. One of the questions that Stuart asked was how the project will benefit the organization. From that conversation, Stuart remembered the following “Stuart, I’m not sure if the organization will benefit. There are a lot of question marks... We’ve been doing pricing for over 50 years and we have well established processes in Finance to help generate the rate sheets. I consider this process a core competency within the Finance office.”

The IT Perspective

Vidya Singh, the VP of IT, was a seasoned professional with over 20 years of experience in software development, IT solutions, and major transformation projects. Stuart walked into Vidya’s office as she was completing a phone call. He looked across the room at a glossy poster that described IT’s vision and a schematic of NAVF’s systems roadmap from 2007 to 2012. Stuart noticed that the roadmap included optimized transactional pricing as an integrated module and couldn’t help wonder why the current implementation is not as integrated as the roadmap suggests. Vidya completed her call very quickly and thanked Stuart for his patience.

“So I hear that you’re looking into the price optimization project. What a mess and I don’t envy you Stuart. What did you do to deserve this?” said Vidya jokingly. She continued by highlighting to Stuart that she’s not happy with the vendor because their software development capabilities are not adequate. She repeatedly mentioned to Stuart “I would have preferred to develop the optimized transactional pricing capabilities in-house...”

Stuart interrupted Vidya by saying “I understand how an internal solution can be more manageable. You’re right Vidya, we should have entertained the option of an internally-developed solution. How is your function impacted by the project?”

Vidya replied “It’s tough to integrate the vendor’s software with existing applications and this makes the cost of maintaining the system more expensive... For example, we’re constantly having to deal with software problems... Our internally-developed applications are much more reliable because we designed them with the existing environment in mind...” After a lengthy narrative of her dissatisfaction with the vendor, Vidya concluded “We reduced IT’s budget by a third over the last few years and I don’t have resources to continue working with the vendor to address issues. Maybe you can convince Bruce to give us more resources and let’s build the solution in-house. I’m confident we can do a better job than the vendor.”

The Analytical Perspective

John Wise, VP of Risk Management and Analytics at NAVF, asked one of his managers Melissa Fleming to join him for the discussion with Stuart. Melissa was on the original project team where she led the effort of evaluating the analytical capabilities of the software. As a holder of a Ph.D. in Statistics with

extensive experience in optimization, Melissa was the right person for that job. Stuart started the discussion with a question to Melissa. “Can you please describe the vendor selection process?” Melissa quickly replied “From an Analytical perspective, I reviewed the capabilities of all vendors. I wanted to make sure that they have the right people in place first. We reviewed the optimization capabilities and discussed at length the mathematical formulations...” She continued “In my view, the vendor with the most technical expertise was not selected because their software did not have adequate reporting and workflow capabilities... Still, the selected vendor had a good analytical team and an acceptable approach to solving optimization problems.”

Stuart asked “What’s needed to evaluate the incremental benefit of the pilot?” Melissa replied with some frustration in her voice “The problem is that we need to expand to more markets in order to have more data but we are asked to demonstrate benefits first. Because the current implementation is limited, it will take another year or so before we gather enough data to have narrower confidence intervals around the results. The models will improve over time with more usage. Also, the design of the experiment is flawed because Sales and Marketing placed limitations on which markets we can use for the pilot. The selection of treatment and control markets could have been done better...”

At this point, John interjected by saying “You see Stuart, we want to implement this technology... It’s an important project but we also have many other initiatives that we are working on. As you know, my team has developed all the credit and operational models for the organization and we have a big responsibility to keep them going. Supporting the day-to-day business needs is always our top priority... My job is to keep the boat afloat, not rock it.”

The Committee’s Perspective

Stuart attended two pricing optimization project steering committee meetings, as recommended by Frank, VP of Strategic Planning. In the first meeting all directors representing the six cross functional areas were present with the exception of Finance and IT, which were represented by junior staff. On the agenda was a review of a report that compares the underwriting ROE in each market to the targeted ROE for that market. The expected underwriting ROE represents the ROE that NAVF expects over the life of the loan, at the time when the loan is underwritten. The targeted ROE is set at the President’s level and is part of a policy decision. A summary of the report is provided in table I below and represents data for January and February 2010.

Table 1 - Report Summary of Targeted ROE Compared to Underwriting ROE

Pilot Markets (5)		Legacy Markets (31)	
Targeted ROE	Underwriting ROE	Targeted ROE	Underwriting ROE
16.0%	15.40%	16.0%	15.30%

After Finance presented the results, Tony Penneli, Director of Sales, asked “Our underwriting ROE has always varied by plus or minus 30 basis point (1/30 of a percent), how should I interpret these results? Are we able to say that the better performance of the pilot markets is statistically significant?”

Tina Pavlova, Director of Analytics replied “We’re no closer to answering this question than were a month ago. We need more data and time... Evaluating ROE is a partial way of assessing pilot results because actual profits and the volume of loans we underwrite are important measures too. It’s quite possible to have the same ROE in both pilot and control markets but have much higher profits in the treatment markets due to increased loans volume.” Tony replied jokingly “I’m held accountable for ROE and that’s the only measure for me. We can’t jeopardize ROE targets.”

In the second meeting, Finance, Sales, and Operations sent junior representatives. One of the scheduled discussion topics was a project update to be delivered by an analyst from Finance. The discussion focused largely on system speed and, in particular, the slow response time of the reporting functionality that is used by the Sales team. In addition, IT reported that they needed to reboot the optimization server several times in the last few months because it stopped responding. As a result, several loans were priced using the default rate sheet as opposed to the price optimization engine. The meeting was dominated by IT expressing that this project is consuming their resources on support activities.

Back to the President with a recommendation

About two weeks after their initial meeting Stuart and Bruce met again to discuss the status of the project. Bruce dispensed with small talk and quickly asked Stuart “What did you find out about the project? Are we going to cancel it or move forward with a quick implementation plan?” Stuart had fully thought about what he learned during his fact-finding mission. He was ready to provide Bruce with a recommendation.

Exhibit 1

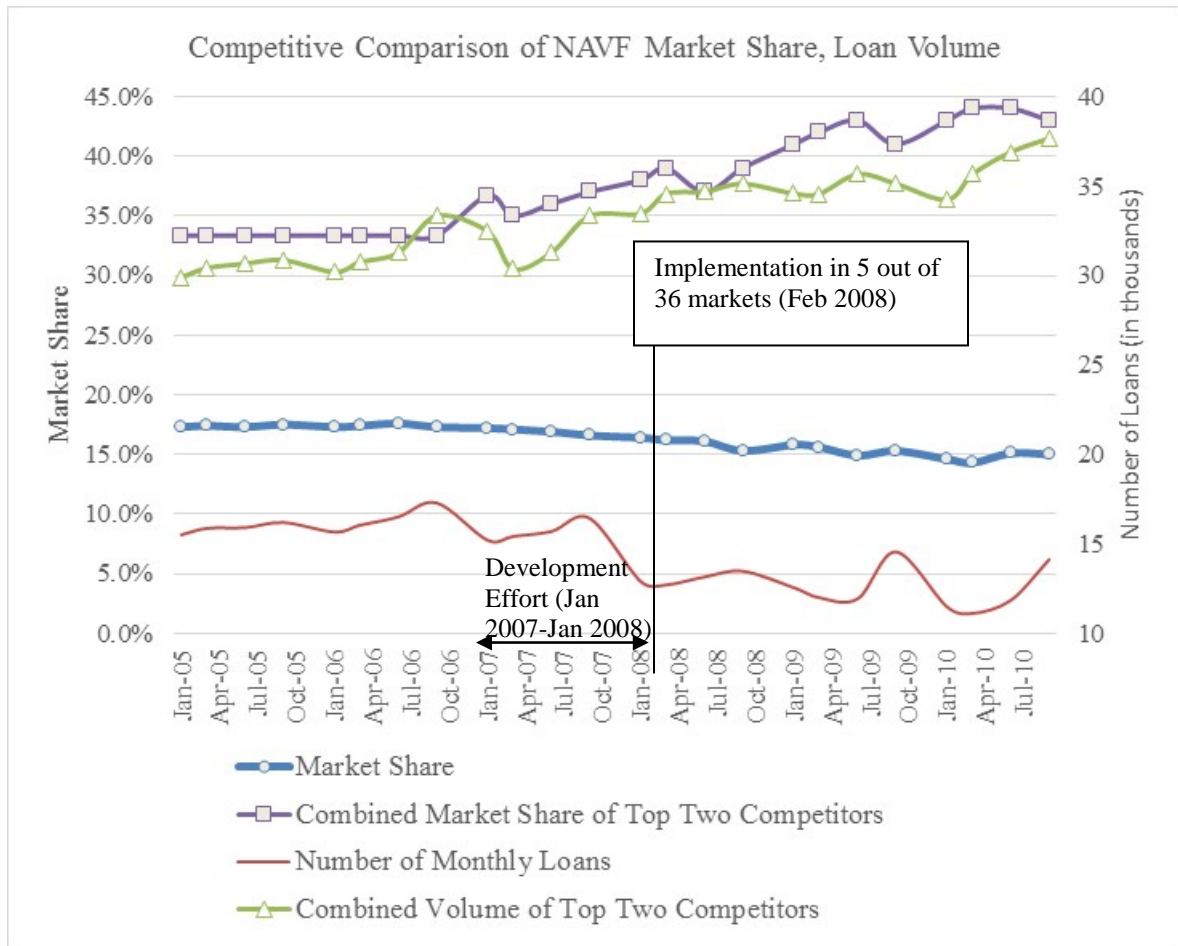


Exhibit 2

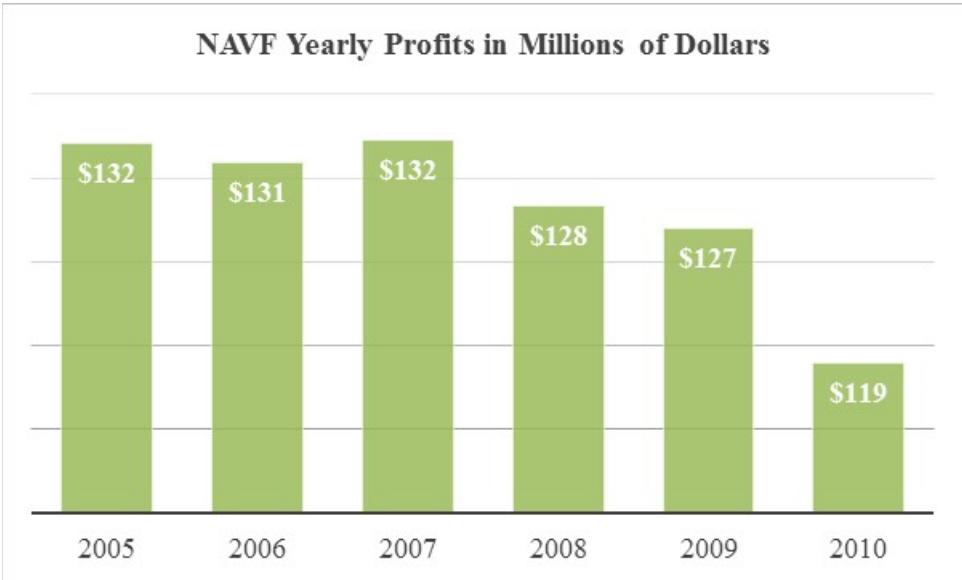


Exhibit 3

North American Vehicle Financing

A Division of Credit International Bank

Rate Sheet Rates as of September 1, 2009

		Credit Risk Level (FICO Score)				
		Low				High
		> 720	680-719	640-679	600-639	<600
Loan Term in Months	Up to 24 months	1.3%	2.2%	3.4%	4.5%	7.8%
	24 to 48 months	1.6%	2.5%	3.9%	6.1%	9.9%
	49 to 60 months	2.1%	3.1%	4.7%	7.0%	11.4%
	60 to 72 months	2.7%	3.8%	5.8%	8.3%	14.9%
	72+ months	3.5%	4.7%	6.9%	9.8%	17.5%

Exhibit 4

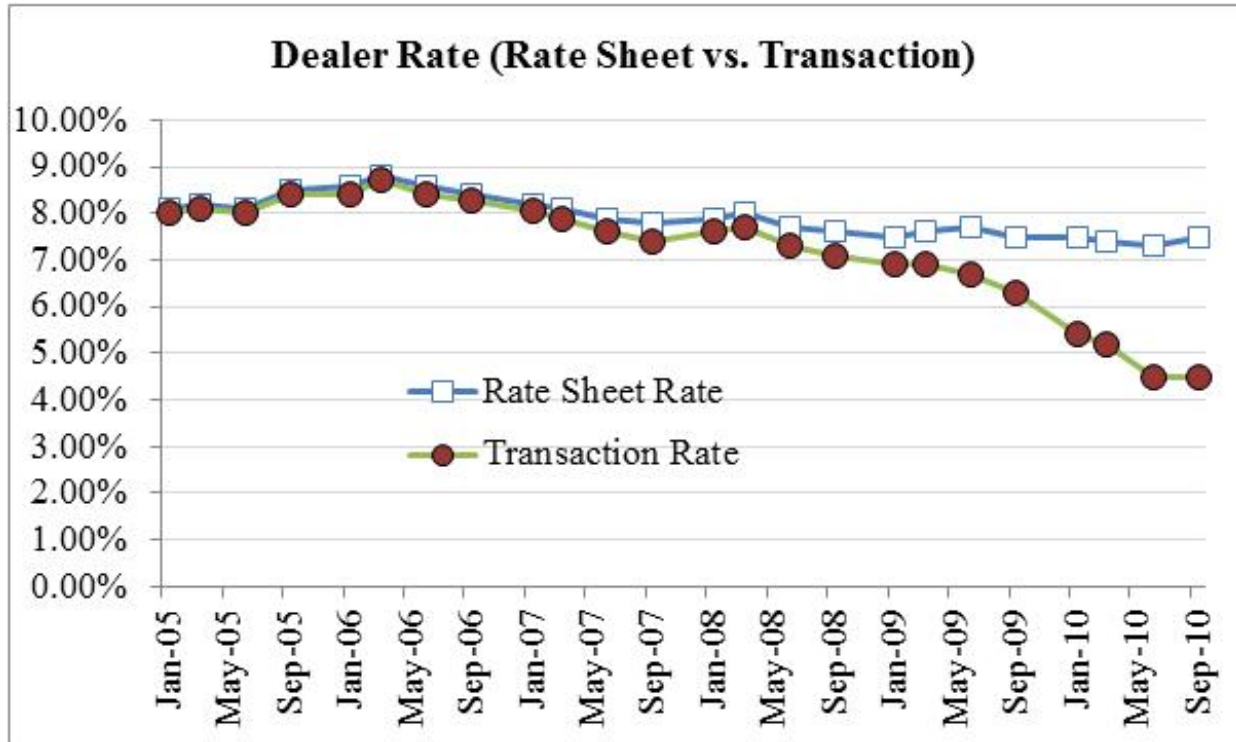


Exhibit 5

Legacy Pricing Process

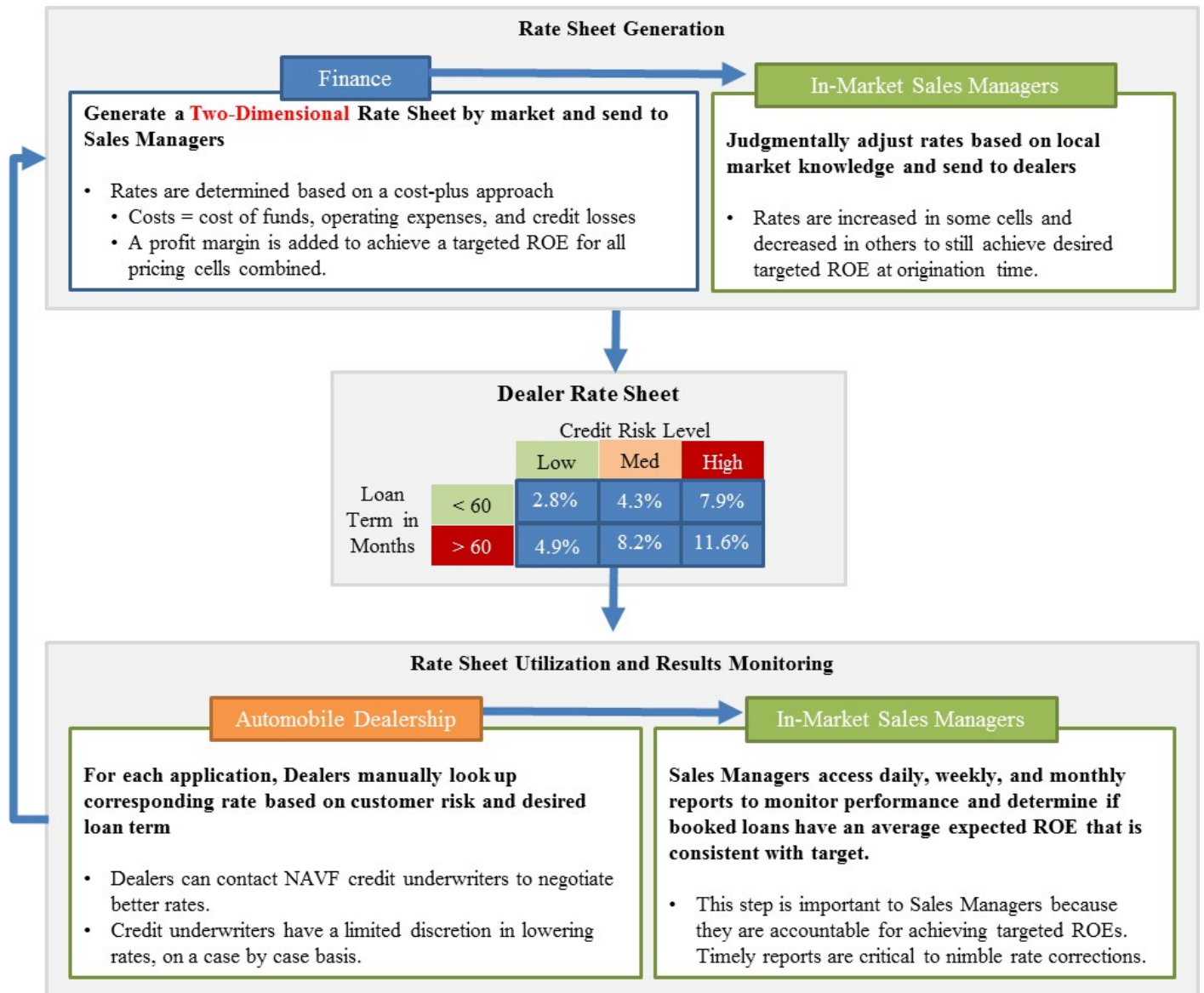


Exhibit 6

Optimized Transactional Pricing Process

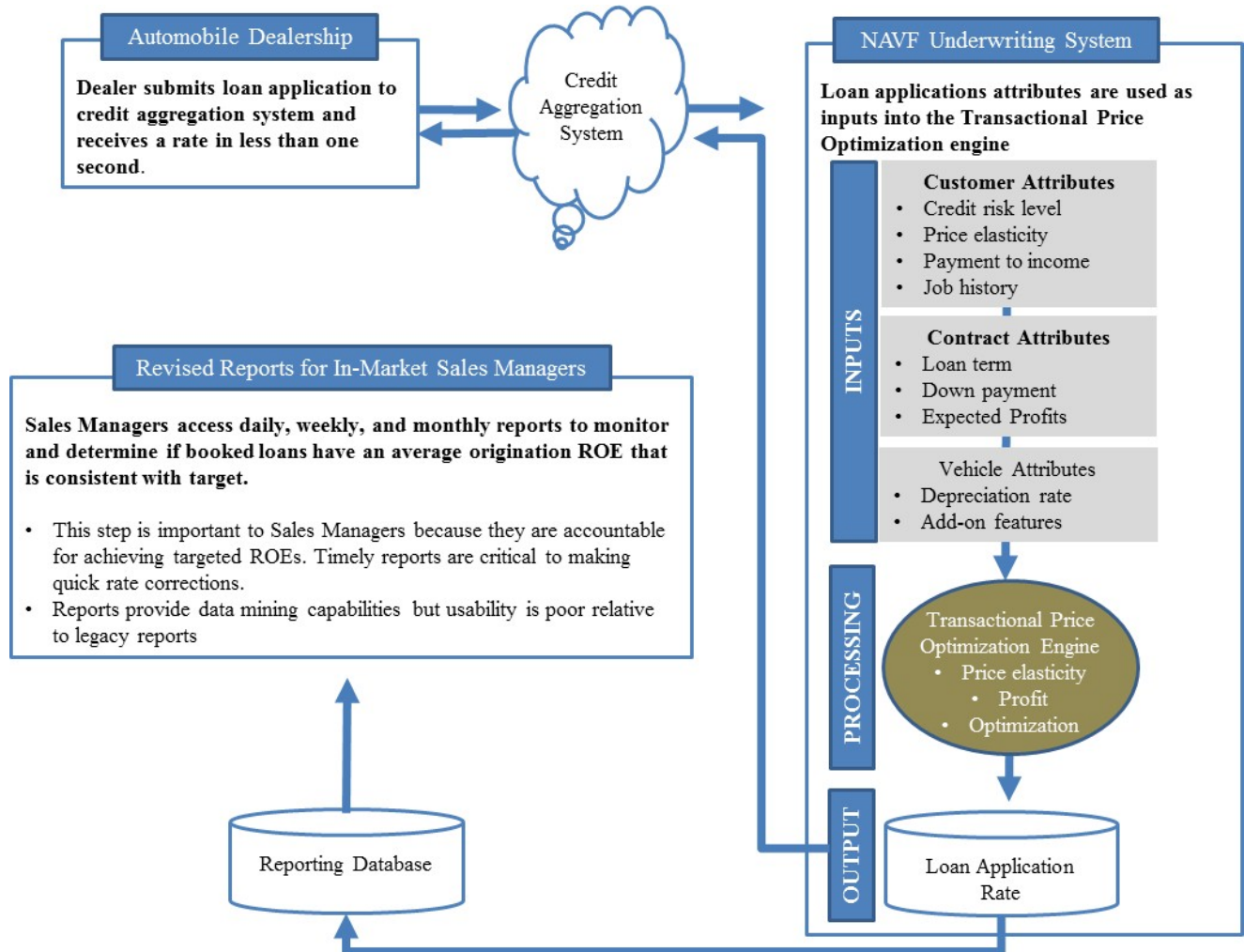


Exhibit 7**Implementation Results in 5 Markets after Two Years**

	Jan 2007 to Jan 2008	Feb 2008 to Feb 2010	Change
ROE			
Legacy Pricing (31 markets)	15.5%	15.7%	0.2%
Optimized Transactional Pricing (5 markets)	14.9%	15.2%	0.3%
		Net Impact	0.1%
Expected Profit per Loan			
Legacy Pricing (31 markets)	\$230	\$233	\$3
Optimized Transactional Pricing (5 markets)	\$243	\$249	\$6
		Net Impact	\$3
Loans Booked as a Percent of Approved Applications			
Legacy Pricing (31 markets)	43.9%	48.7%	4.8%
Optimized Transactional Pricing (5 markets)	47.3%	52.2%	4.9%
		Net Impact	0.1%