

White Paper

Customer Value Management

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Customer Value Management - Decisions Based on Quality vs Quantity

All customers are not created equal. And with today's emphasis on gaining return on the marketing investment (ROMI), companies must figure out how to differentiate their higher and lower value clientele. Adaptive Technologies, Inc., (ATi) offers such a customer value management capability through its sophisticated predictive analytics solutions, and delivers it in a fashion to drive real-time decision-making.

If you were to ask a business person to state growth objectives for revenue, profit and number of customers, they likely would say they want it all and more. In reality, those goals often clash. More customers do indeed equate to more revenue in most cases, but this rarely leads to maximum profit. The reason centers on the cost to serve a customer, which for low revenue-generating customer segments, often exceeds the margins they produce.

Smart businesses consider the value of a customer or group of customers when determining where to focus their relationship building efforts. An examination of the profitability of a customer often reveals overall profits are optimized on only 50-70% of the current customer base. Armed with this knowledge, the business can concentrate on understanding the characteristics which differentiate the profitable from the unprofitable customer. They can devote resources to nurturing the profitable relationships, and market to prospects matching the same valuable customer profile. ATi refers to this as true customer value management (CVM).

Successful CVM involves applying the right level of resources to deliver the right message at the right time via the right communications method. In order to meet the needs of existing and prospective customers and meet the company's goals, CVM emphasizes quality of customers over quantity of customers.

One way to facilitate this success is through the use of predictive analytics. Models built using predictive analytics methodologies will not only identify the best customers and prospects, they will also suggest what actions to take through an understanding of what variables drive the models.

ATi is an industry leader in the development of predictive analytics models to drive CVM. The proprietary technology does not rely on a single type of model, but rather employs a wide variety of modeling techniques against a customer data set to form a consensus "best" model for each situation, and an associated probability for the predicted outcome. While the modeling processes and methodologies are highly complex, the outputs are intuitive and easy to understand, allowing for confident decision-making on the part of the end user.

Customer Value Management in Action

Consider the example of a business offering a loyalty program as a strategy to build market share through establishing and maintaining long-term customer relationships. While revenue generation is obviously important, the company must also keep an eye on the bottom line, seeking to maximize profit. The facts in this example:

- The organization receives hundreds of thousands of inquiries annually through direct-response television, the Internet, direct marketing, and other advertising programs.
- Following up on the loyalty program leads and fulfilling requests for “get started” enrollment kits is costly.
- Moving prospects from enrollment to activation is vital to the business’ profitability.
- The ratio of enrollments-to-leads and activations-to-leads is historically low.
- The mindset was “maximize leads to maximize enrollment.”
- No system was in place to gauge the quality of one lead versus another.

A predictive analytics approach and solution from ATi changed all that. Three years of data detailing leads, enrollments and activations, and lead source information by media type were combined with socio-demographic variables at the census block group (CBG) level to build models predicting both enrollments and activations from leads. The models produce probability scores for likelihood to enroll and likelihood to activate for each lead. Scores are ranked from highest probability to lowest and placed in deciles, groupings of 10% of the leads.

Percent of Enrollments and Activations by Decile Figure 1 demonstrates the effectiveness of the ATi model in identifying high quality versus low quality leads. For enrollments, over 78% come from the top four deciles, or 40% of leads. The success rate is even better for activations, as nearly 92% come from the top four deciles. This has major implications for choosing which leads to pursue first, and which leads to not pursue at all. It is no longer a “one size fits all” or “first-come, first-served” proposition. Quality of leads is clearly identified.

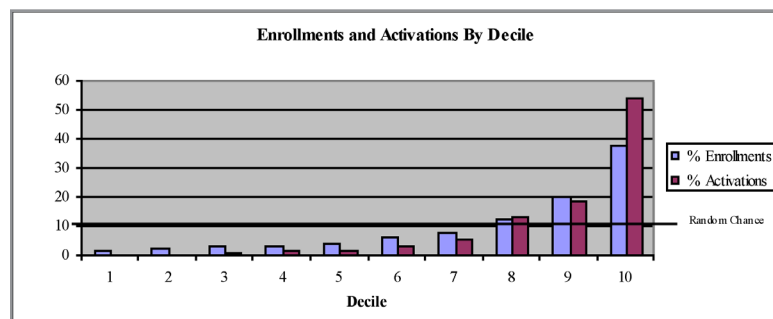


Figure 1. Percent of Enrollments and Activations By Decile

Activation Rates of High- and Low-Scoring Deciles Figure 2 illustrates the comparative activation rates from leads for deciles seven through 10 versus deciles one through six. Historically, all leads were pursued randomly. Leads in deciles seven through 10 are nearly nine times as likely to activate as those in deciles one through six. Reprioritizing the order in which leads are worked to more heavily pursue high quality prospects will quickly replace the lost revenue from lower deciles. In fact, just improving the activation rate from 4.8% to 5.4% through focused effort will replace any lost revenue from the lower deciles, while improving profit substantially. If 60% of the leads are no longer worked, then resources will be readily available to help achieve that improvement. Focus on the quality opportunities to increase performance and ROMI.

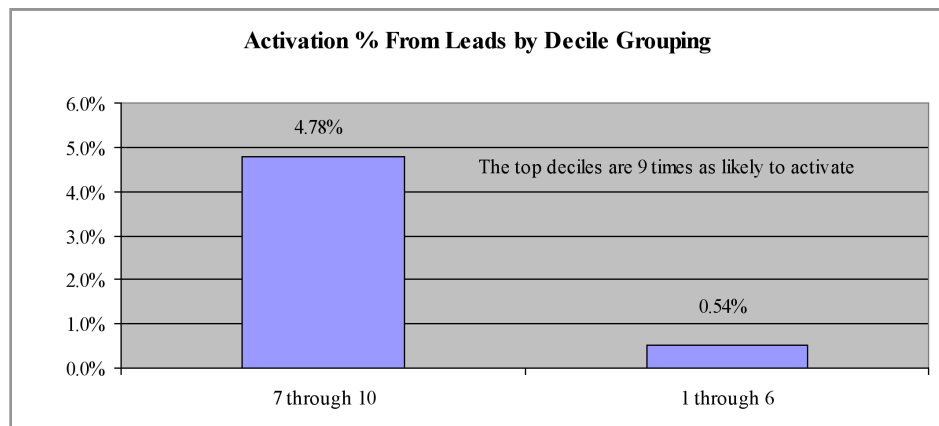


Figure 2. Activation Rates of High- and Low-Scoring Deciles

ATi predicts an optimum profit level, but because the company knows the costs associated with processing a lead through various lifecycle stages to enrollment and activation, they can analyze “what if?” scenarios to understand the revenue and profit impact of various alternative options.

The gains chart depicted in Gains Chart Table 1 shows the relationship between revenue and profit when pursuing leads at different depths of the model. Profit optimizes at decile seven, or again, the top 40% of leads. If they pursue all leads, revenue increases by almost 14%, but they sacrifice over 40% of the profit!

In dollar terms, the \$2.4 million in revenue gained from pursuing all leads comes at the expense of \$2.8 million in profits. Conversely, Profit Optimization Point Figure 3 illustrates pursuing anything less than the top 40% yields both lower profits and lower revenues.

Decile	Cumulative Activations	%	Cumulative Profit (\$000s)	%	Cumulative Revenue (\$000s)	%
10	32,179	41%	\$4,055	98%	\$8,150	41%
9	49,803	64%	\$5,777	140%	\$12,605	64%
8	61,276	78%	\$6,622	160%	\$15,516	78%
7	68,795	88%	\$6,910	167%	\$17,414	88%
6	72,824	93%	\$6,793	164%	\$18,426	93%
5	75,210	96%	\$6,452	156%	\$19,034	96%
4	76,574	98%	\$5,931	143%	\$19,388	98%
3	77,489	99%	\$5,366	130%	\$19,616	99%
2	78,101	100%	\$4,846	117%	\$19,768	100%
1	78,388	100%	\$4,134	100%	\$19,844	100%

Table 1. Gains Chart

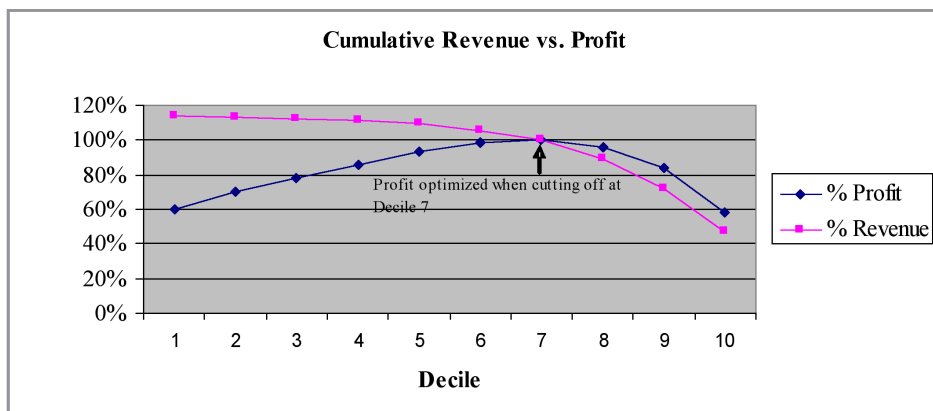


Figure 3. Profit Optimization Point

While the profit story is compelling, most businesses still struggle to grasp the idea of intentionally forgoing significant amounts of revenue. That is where the quality versus quantity aspect of customer value management (CVM) matters.

Understanding the drivers of high-scoring leads provides guidance on how to pursue more prospects who fit a profile of success. Without increasing overall spending, the company can direct a similar amount of resources toward leads with a higher likelihood of becoming profitable. When executed successfully, customer counts remain steady, but per customer profitability increases dramatically, as does return on marketing investment (ROMI).

How is ATi Different?

Typically, statistical modeling practitioners can produce the kinds of results seen in the tables and charts provided. So, how does ATi's approach deliver superior customer value management capabilities?

ATi's technology uses thousands of proprietary algorithms, known as Individual Self-Monitoring Artificial Agents (ISMAA) to analyze your data from many perspectives...not just one. A client is not tied to one "best" model rather the consensus of a number of models which best fit the available data -- a unique perspective and a unique solution.

The technology considers all variables and combinations of variables as potential drivers in the given problem. For example, if a data set has 20 data points with five possible values for each, there are over 3.2 million unique combinations. This would be overwhelming through traditional analytic practices. It is not with ATi because our proprietary technology instantly analyzes those millions of unique combinations of variables to truly understand key drivers of outcomes, in real-time.

Traditional predictive modeling applications, such as regression modeling, neural networks and other data mining techniques all have limitations. For example, regression modeling is easily understood, but it requires normally-distributed data, it can be oversensitive to statistical outliers, and it works better for smaller data sets than larger ones. Neural networks can handle large data sets and account for complex interaction among variables; however, the output is difficult to interpret and the models are often subject to over-fitting. Comparison of ATi Table 2 draws a comparison between ATi's approach and other common modeling methodologies.

Commonly Used Techniques	Pros	Cons	The ATi Advantage
Linear Regression Modeling	<ul style="list-style-type: none"> • Expertise is readily available • Often powerful in static data sets with less variance • Most powerful in smaller data sets • Easily understood by most 	<ul style="list-style-type: none"> • Model is static • Often used outside its scope of effectiveness • Oversensitive to outliers in the data sets • Not ideal for larger data sets • Misses important non-linearities 	<ul style="list-style-type: none"> • Easily manages large data sets most commonly associated with business issues • Identifies outliers and absence of data without affecting the accuracy of the output
Neural Networks	<ul style="list-style-type: none"> • Able to learn from new data within the data set • Handles large data sets with broad statistical distribution well • Does not require perfect data 	<ul style="list-style-type: none"> • Must be “trained” and maintained by an expert in order to keep it “tuned” • Lack transparency and interpretability 	<ul style="list-style-type: none"> • Utilizes neural networks within the technology, overcoming its weaknesses through the inclusion of a number of other methodologies in the platform • Outputs are transparent—including the key drivers and level of confidence associated with predictions • Maintained by ATi’s team of science and technology experts on a 24/7 basis
Other Statistical Methodologies	<ul style="list-style-type: none"> • Extend modeling capabilities to larger sets of functions than linear regression • Most effective in larger data sets • Able to manage data which is not linear or quadratic in shape 	<ul style="list-style-type: none"> • Often requires iterative optimization procedures to compute parameter estimates, taking a lot of time • Frequently oversensitive to outliers • Fewer model validation tools relative to linear regression models • Model is static • Often overfit to a particular data set and therefore function poorly on future data sets 	<ul style="list-style-type: none"> • Analyses are the functionality of the technology; hence, the iterative processes are “automatic” • Technology utilizes a set of most relevant models to provide the output; therefore, the validation is present within the set of models • Technology “learns” as more data is added

Table 2. Comparison of ATi and other modeling methodologies

As indicated in the techniques comparison chart, ATi models “learn” and adjust with each new data input. Predictions from the models become increasingly accurate. Information and recommendations become more actionable.

The ATi models supporting customer value management in this example produce more than just scores. The top drivers of lead probability at both aggregate and individual lead levels deliver great understanding about how to improve lead conversion. Examination of drivers at an aggregate level, such as decile or perhaps all profitable deciles, can provide guidance in how to structure the communication and target media in large campaigns. At an individual level, having the drivers available can inform a customer conversation in a call center. Example of Individual Lead Score Drivers Table 3 displays how each individual customer or prospect has a unique set of key drivers as part of their overall model score.

ATI’s multiple-model approach creates this variability across customers, allowing for a unique evaluation of each outcome. With a conventional, single-model methodology, the ability to understand the reasons behind each individual score is limited, or lost altogether.

Customer Number	Decile	Normalized Score	Driver 1	Driver 2	Driver 3	Driver 4
35084	10	14.123	HH Income > \$120,000	Lead Age 40-44	% HH w/New Car Purchase > 20%	% HH w/Healthcare Insurance > 45%
48278	10	14.097	Lead Age 35-39	HH Income \$100,000 - \$120,000	Purchased Product A = Y	Education = Bachelors Degree
98308	10	14.017	% HH w/Healthcare Insurance > 45%	Median Home Value > \$250,000	% HH w/Healthcare Insurance 30-45%	HH Income > \$120,000
30985	10	13.996	Lead Age 30-34	Education = Bachelors Degree	HH Income \$80,000 - \$100,000	Median Home Value > \$250,000
12080	10	13.920	% HH w/New Car Purchase > 20%	HH Income \$100,000 - \$120,000	Lead Age 45-49	% Single Family Dwellings > 70%
28048	10	13.885	HH Income > \$120,000	Purchased Product A = Y	% HH w/Healthcare Insurance > 45%	Lead Age 40-44
30737	10	13.864	HH Income > \$120,000	% HH w/Healthcare Insurance 30-45%	Purchased Product A = Y	Lead Age 40-44
63083	10	13.811	Lead Age 35-39	HH Income \$60,000 - \$80,000	Purchased Product A = Y	Median Home Value \$200,000 - \$250,000
97372	10	13.797	Lead Age 35-39	% HH w/Healthcare Insurance > 45%	Education = Masters Degree	HH Income \$60,000 - \$80,000
57211	10	13.761	Purchased Product A = Y	Lead Age 40-49	Purchased Product C = Y	State = CA

Table 3. Example of Individual Lead Score Drivers

Portfolios of Customers

Not every business is equipped to execute to individual customer profiles or considerations. ATi makes predictions at the individual level so a company can review rolled-up “portfolios” of customers, as well. In our loyalty program example, the company can have several different types of customer profiles, from most profitable, most frequent buyers, highest revenue or most broadly penetrated -- all with different levels of loyalty and different ways to impact company goals. The company may learn that most loyal does not necessarily mean most profitable, or that even their most frequent visitors still have the most incremental potential. ATi scores the key drivers at an accumulated decile or portfolio level proving to be very powerful in driving communications decisions and in effectively managing customer value.

Efficient and Effective Delivery

Beyond the superior analytics capabilities, ATi also differs because the platform application is not a tool. ATi offers a solution delivered in a software-as-a-service (SaaS) model. This eliminates the need for a large footprint implementation within a client’s existing environment, and reduces implementation time from many months to just weeks.

Unlike more traditional connotations of SaaS, ATi does not provide access to a single product via the web to multiple organizations, as this would not allow ATi’s clients to utilize their valuable internal data in the analyses. Rather, ATi utilizes SaaS to allow our clients to have access to the solution which ATi creates utilizing their own data and external data for online access to customized Intelligent InformationSM – actionable intelligence.

The SaaS model allows our clients to export data from multiple, siloed internal systems to ATi for incorporation into a data mart, from which ATi runs its proprietary analytics platform. Data can reside on either ATi servers or the organization’s internal servers. The results are then pushed back to the end-users at the defined levels within the organization to enable real-time decision making from real-time data--not a cut of “old” data.

ATi ensures the Intelligent InformationSM provided to each end user is actionable, allowing them to make meaningful decisions and course changes where appropriate. ATi bases all outputs on a common data platform across the client company, so one can be assured the results they see come from the same data, cut in the same way, as a person in another department or level in the organization.

The primary benefit of ATi’s SaaS delivery is the immediate access and reliance on a team of science and technology experts to manage and maintain the application 24/7, so the client does not need a team of artificial intelligence (AI) experts dedicated to managing the product or continuously re-evaluating the outputs.

An Optimal CVM Process

The ATi approach to customer value management is a proven way to build a business based on quality not quantity. As cited in the example, there is a measurable difference in return on investment and profitability when focusing the quality of your customers. Understanding which customers to target, as well as when, where and how to target them results in significantly increased revenues and significantly lower costs.

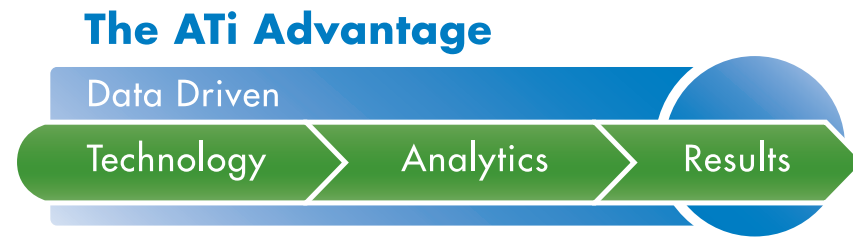
Clients choose ATi to help optimize customer value with:

- **Better models** driven by proprietary methodologies constantly learning and delivering individual customer recommendations.
- **Faster implementations** through a zero footprint software-as-a-service model
- **More effective and less expensive investments** in valuable analytics.

ATi delivers a superior solution for optimal customer value management. To learn more about ATi's predictive analytic solutions visit <http://www.adaptiveinc.com>

The ATi Advantage

The ATi Advantage uniquely provides organizations the capability to make data-driven decisions with Intelligent InformationSM. ATi's combination of customizable analytics solutions and patented technology advances business intelligence and predictive analytics into confident decision-making for every size business, in every industry. Working with organizations, simple to complex, ATi takes cross-enterprise data and turns it into Intelligent Information that drives results. We are a trusted partner that grows with our clients, committed to helping them solve problems faster, reduce costs, innovate and strategize for profitable growth. Whether looking to improve customer loyalty, manage customer value, reduce costs, drive business change or predict risk – ATi is the logical partner to help organizations achieve superior results.



About Us

Adaptive Technologies, Inc. (ATi) helps business leaders make better decisions. We provide companies with tailored business intelligence and advanced predictive analytics solutions that turn enterprise data into intelligent, actionable information.

The ATi Advantage is our unique combination of patented technologies and proprietary analytics that produce Intelligent InformationSM for confident decisions, helping organizations achieve real and superior results.

ATi's expert team of scientists and software engineers has developed solutions that use the power of science, human insight and technology to create proven multi-dimensional modeling, behavioral profiles and predictions to empower decision makers with Intelligent Information. We create comprehensive solutions that enable organizations to be smarter about their data and to use it effectively for better decision making. Competence is our hallmark. Intelligent Information is what we produce. Confident decision making is what our clients consistently trust us to provide them. And, a strategic competitive advantage through cost reduction, optimized organizations and profitable customer and vendor relationships is our promise to our customers.

Founded in 2001 by Chris Stephens and Henri Waelbroeck, Adaptive Technologies, Inc. is privately held and based in Arizona. The company is led by Susan Cordts, President/CEO.

For Further Information

Learn more about ATi's proprietary technology and customized predictive analytic solutions by visiting www.adaptiveinc.com. For further information, contact ATi directly at 602-923-4200 or email us at info@adaptiveinc.com.