Agilytics

How Agilytics Became a Valued Teaching Tool at Dartmouth

SUMMARY

For nearly two decades, Professor Scott Neslin, PhD, who teaches at the Tuck School of Business at Dartmouth, has been using ASA applications to help educate his students about commercially available predictive analytics software. Some might wonder what it is about ASA's products (Agilytics ML and its predecessor, ModelMAX) that continue to make them so relevant and important for teaching MBA students. One reason, according to Dr. Neslin, is because what Agilytics ML does, it does it very well, and very fast.

THE CLIENT

Dr. Neslin's role at Tuck is to help prepare MBA students to enter the business world as effective leaders. His course provides the necessary exposure to practical analytical tools and processes needed to succeed in today's modern, data-driven world. Students at Dartmouth are a discerning group, and many have practical experience in the business world already. Dr. Neslin's mission is to expose his students to the best tools available to meet tomorrow's business challenges.

THE CHALLENGE

Back in 2002, Dr. Neslin, a self-identified quant person and model builder, was just beginning to explore the predictive modeling and Customer Relationship Management (CRM) world. He had conducted research earlier using supermarket scanner data, and was now researching CRM while developing a course on marketing analytics, and was looking for a challenging exercise to include in the course. A casual conversation with a colleague from Boston College brought ModelMAX to Dr. Neslin's attention. Immediately he saw the opportunity—his students could apply ModelMAX to a case based on data from Intuit. The task would be to predict which customers would respond to an offer from Intuit to upgrade their current software. This would enable the students to recommend which customers to target in the future. Back then, good data sets were hard to come by, and the data was messy, but it was basically solid, and would put ModelMAX to the test.

Previously, Dr. Neslin had used SPSS to run logistic regression. ModelMAX seemed like a tool that could provide similar functionality, drawing on a predictive model one step above logistic regression, namely neural networks. Being able to predict such things as customer response to an upsell offer, as well as other customer actions such as click-throughs and churn are key business objectives that, with the right predictive modeling tool, could add up to millions of dollars in savings or added revenue for companies. ModelMAX looked like something that could give companies that edge.

Shortly after, Dr. Neslin reached out to ASA to see if the software was as good as his colleague had suggested. What Dr. Neslin wanted was to put together a good case with good software that his students could learn from.

THE SOLUTION

When Dr. Neslin contacted ASA about ModelMAX, it was the beginning of a partnership that has spanned two decades. Dr. Neslin's students used ModelMAX, and later Agilytics ML, to help analyze real applications like the Intuit data case. The core of Agilytics ML is the same that powered ModelMAX, except that it processes data even faster than its predecessor.

When Dr. Neslin first reached out to ASA, there were very few options for software that could run neural nets, though this is not the real strength of Agilytics ML, in Dr. Neslin's opinion. "The real strength is the pre-processing of the data. You can throw in the messiest data in the world, and it creates various dummy variables, new transformed variables, and assembles the data. In short, it does the dirty work so the students can do the 'think' work."

Agilytics' use of neural nets, coupled with its proprietary method of pre-processing data, are at center of this hybrid analytical process, making it germane to the needs of today's students and businesses. Additionally, the software is competitive with even more

sophisticated techniques, and processes data much faster. Why Agilytics ML works, says Dr. Neslin, is that "In my experience… data matters more than technique." Dr. Neslin added, "Assume I ask a real data scientist – a practitioner who's worked in the field – would you rather have a better statistical technique, for example a generalized additive model or a gradient regression tree model, or would you rather have better data, say, on the competition? I expect the answer to be, 'Give me better data, give me data and I will move the world'. That's why Agilytics' data pre-processing capability is so important."

Dr. Neslin noted the strengths in data pre-processing in other applications besides Intuit. This is what Agilytics ML does well: automatically creating dummy variables; refining, strengthening and binning data; handling outliers and nulls, etc., ensuring every aspect accurately supports enhanced pattern recognition, and all with speed and economy.

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"What ASA offers is not the model, is not the technique. You can get the technique in R – it's the pre-processing of the data (which is a real hassle in R). The way that ASA does it…the way the output is displayed, the results are really very good." Dr. Neslin added, "The real competitive advantage is in the handling of data when it's just dumped in there. That said, it's not 'just' a data management tool; the predictive model it estimates based on the data it compiles is a powerful neural net. So the data management effort pays off in excellent predictive accuracy."

PRACTICAL USE

Since 2002, Dr. Neslin has included the Intuit case in his class, using Agilytics ML and its predecessor ModelMAX, for the analysis. He has used it on other cases as well. Over the years, Dr. Neslin has perfected his own documentation for introducing Agilytics ML and applying it to analyze the Intuit data. He finds that most students grasp how to use the software effectively enough within the short timespan required – less than one week – to complete the assignment successfully. "I wish I did have more time to demonstrate Agilytics ML in the classroom…that would take a solid 45 minutes and I just don't have the time," he admits. Still, the fact that students can train themselves within a week using just the special documentation Dr. Neslin created shows that the software doesn't have a particularly steep learning curve.

Dr. Neslin has compared Agilytics ML to other predictive modeling solutions, available in R or SPSS, and it compares favorably when it comes to results. ModelMAX was always easy to use, but the latest improvements to Agilytics ML make it even easier. The main improvement stems from the 64-bit upgrade, which makes

Agilytics ML run even faster than its predecessor. "It's a really noticeable improvement… how fast it runs and how fluid, how easy it is to operate the software."

"Almost every business school has an analytics class or a focused customer analytics class like mine – they're all candidates to use Agilytics ML," Dr. Neslin reported. He also mentioned that with cost minimization concerns underlying most businesses, a tool like Agilytics ML can be a real cost-cutting measure because it's so efficient both in data pre-processing and model estimation.

MOVING FORWARD

Prof. Neslin plans to continue using Agilytics ML in his classroom, "As far as I'm concerned, it could stay the way it is right now, and I would continue to use it forever. It's really, really good, and it really educates my students."

It's a story of extraordinary loyalty, and it is a relationship that works both ways. The staff at ASA will continue to cherish the relationship between him and his students and look forward to another 20 years together.

ABOUT ASA

ASA is a pioneer in automating and simplifying advanced analytics, decision management and data driven operations. Their solutions grow revenue, develop and retain customers, mitigate risk, prevent fraud, and much more, always with time and convenience in mind. Since 1992 ASA has worked with a wide range of clients around the word, from the Fortune 100 to SMBs to solo practitioners — the common link is a desire to be more analytical, yet also more efficient and cost effective.

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