adaptive predictive modeling

challenge

A rapidly growing private telecommunications company was unable to forecast its revenue precisely as a result of complex service delivery processes and dependencies on vendors. This lack of prediction control led to two major obstacles for the company:

- Investors were hesitant to provide funds to a rapidly growing business that was unable to predict its cash flow; and
- Large amounts of cash were kept on-hand to fund day-to-day operations because the amount of cash available as revenue could not be relied upon.

solution

David designed a high-level process flow, working from metrics and systems the company already had in place, to determine the lifecycle of an order. Collecting historical data about all orders, he constructed a mathematical model to describe the probability of an order moving to the next step in its lifecycle and the expected velocity for orders to move through each step.

Applying this new model to current orders yielded a basic prediction for the company's revenue. The model was then enhanced with two key adaptive features:

- All probabilities were recalculated daily based on new events, and
- Older data was systematically discounted by gradually diminishing its weight in probability calculations.

With these two enhancements in place, the model was accurate to +/- 1% of revenue at a 45-day horizon.

benefit

The company was able to immediately improve its cash management procedures, reducing the amount of cash-on-hand needed because revenue from operations was extremely accurate. This refined control over revenue flow also led to immediate reductions in risk and improvement in return on long-term cash.

As the company moved into the IPO process, the ability to predict revenue more precisely than competitors demonstrated greater management control over the business, leading to more confidence by investors. In turn, such accurate prediction led to a stronger IPO and share value than those of competitors who were unable to demonstrate similar levels of financial forecasting.

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