

Predictive Analytics

The Right Tool for Tough Times

February 2010

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Executive Summary

Enterprises are under pressure to predict the future behavior of customers and potential customers, and the internal performance of the organization more precisely than ever before. Potential gains for the organizations that do this well include higher customer retention, increased sales revenue, a reduction in fraud, increased productivity and ultimately, increased profitability.

Building on Aberdeen's benchmark report published in May 2008 ([Predictive Analytics: The BI Crystal Ball](#)) this current benchmark report is based on data collected from 159 active users of predictive analytics and data mining technology during January and February 2010.

Best-in-Class Performance

Aberdeen used the following key performance criteria to distinguish Best-in-Class companies:

- Forecast profit and loss for the last fiscal year accurate to within 8% of actual
- Customer retention - current customer retention rate of 93%, and an 11% improvement in customer retention, year over year
- Operating profit - current operating profit of 23%, and a 12% improvement in operating profit, year over year

Competitive Maturity Assessment

Survey results show that the firms enjoying Best-in-Class performance shared several common characteristics, including:

- The ability to align the right customer representative with the right client at the right time
- The use of a dedicated team to discover new customer insights
- The ability to provide executive management with timely, accurate forecasts

Required Actions

In addition to the specific recommendations in Chapter Three of this report, to achieve Best-in-Class performance, companies must:

- Improve their ability to align the right company representative to the right customer
- Use predictive technologies to help drive decisions in real-time, where appropriate
- Empower business users to use predictive models and tools without the assistance of dedicated statistical modelers

Research Benchmark

Aberdeen's Research Benchmarks provide an in-depth and comprehensive look into process, procedure, methodologies, and technologies with best practice identification and actionable recommendations

"It's increasingly difficult to predict customer demand in a market where there is so much over capacity."

~ IT Manager, International
Airline

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Chapter One: Benchmarking the Best-in-Class

Business Context

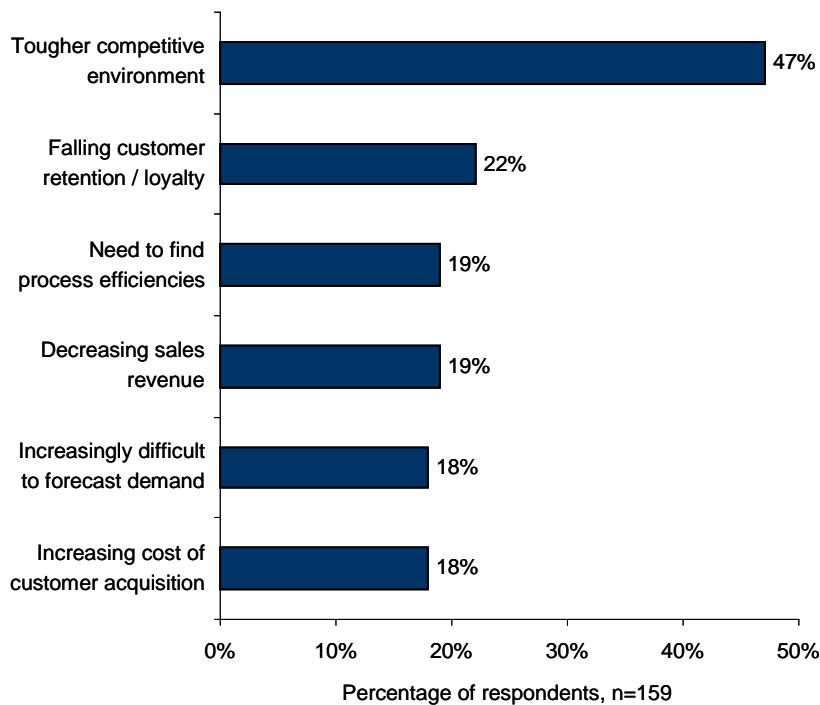
The sheer volume and availability of data that can be used for predictive analysis has increased, as has the range of technologies that address this opportunity. Companies are increasing their ability to tap into data about their customers, product performance, and process efficiencies that has previously been unavailable or not addressed by traditional BI tools.

Over 350 organizations took part in the research survey for this study. Of those, 159 are actively using predictive analytics, and it is that subset that is analyzed in this report. Aberdeen found that organizations were experiencing a number of pressures driving their use of predictive technologies - but one stood out, head and shoulders, above the rest (Figure 1).

Fast Facts

- ✓ 27% of survey respondents need to refresh their predictive models in real-time, or near real-time, when new business transactions are generated
- ✓ However, only 60% of survey respondents that need to refresh their predictive models with a real-time data feed are able to do so

Figure 1: Tougher Competitive Environment Drives Adoption



* Survey respondents were asked to choose two top pressures
Source: Aberdeen Group, February 2010

The tougher competitive environment is a common pressure across the board, whether the organization is Best-in-Class, Industry Average, or a Laggard. There are variations, however, in some of the secondary pressures. The Best-in-Class alone, for example, also face a strong pressure to predict

workforce requirements, with 26% of Best-in-Class survey respondents selecting that as one of their two top pressures.

The Maturity Class Framework

Aberdeen used five key performance criteria to distinguish the Best-in-Class from Industry Average and Laggard organizations.

The first criterion was the accuracy of the profit and loss forecast for the business, compared to the actual profit and loss, for the last fiscal year. This was measured as the deviation of the actual from the forecast, expressed as a percentage.

The second and third criteria were concerned with customer retention. The current customer retention rate was recorded, in addition to the change in customer retention rate over the last year. Both values were measured as percentages.

Finally, the fourth and fifth criteria deal with the organization's operating profit. Both the operating profit margin for the most recent fiscal year and the year to year change in the operating profit margin were captured. Both values were measured as percentages. The values of these key performance indicators for the three maturity classes - Best-in-Class, Industry Average, and Laggards - are shown in Table I.

Table I: Top Performers Earn Best-in-Class Status

| Definition of Maturity Class | Mean Class Performance |
|--|--|
| <p>Best-in-Class: Top 20% of aggregate performance scorers</p> | <ul style="list-style-type: none"> ▪ Actual P&L within 8% of forecast ▪ Current customer retention rate of 93% ▪ 11% improvement, year over year, in customer retention rate ▪ Current operating profit of 23% ▪ 12% improvement, year over year, in operating profit |
| <p>Industry Average: Middle 50% of aggregate performance scorers</p> | <ul style="list-style-type: none"> ▪ Actual P&L within 17% of forecast ▪ Current customer retention rate of 81% ▪ 5% improvement, year over year, in customer retention rate ▪ Current operating profit of 13% ▪ 2% decline, year over year, in operating profit |
| <p>Laggard: Bottom 30% of aggregate performance scorers</p> | <ul style="list-style-type: none"> ▪ Actual P&L within 37% of forecast ▪ Current customer retention rate of 66% ▪ 8% decline, year over year, in customer retention rate ▪ Current operating profit of 14% ▪ 38% decline, year over year, in operating profit |

Source: Aberdeen Group, February 2010

The Best-in-Class PACE Model

Using predictive analytics or data mining to improve corporate performance requires a combination of strategic actions, organizational capabilities, and enabling technologies that can be summarized as follows:

- Integrate predictive models into the existing business processes and workflow within the organization
- Ensure that predictive models and forecasts are rolled up to executive management for use in planning and budgeting cycles

Table 2: The Best-in-Class PACE Framework

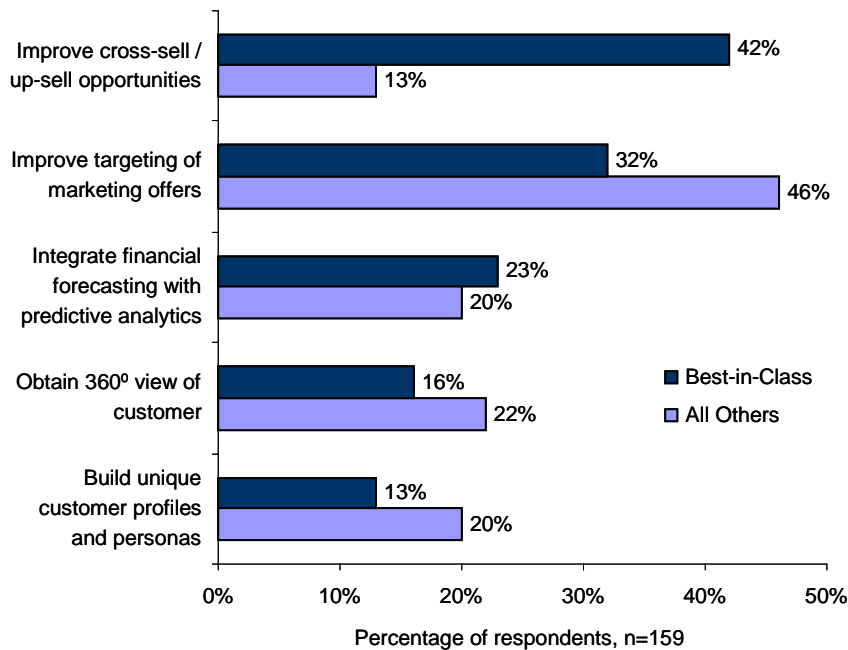
| Pressure | Actions | Capabilities | Enablers |
|---|--|---|--|
| <ul style="list-style-type: none"> ▪ Tougher competitive environment | <ul style="list-style-type: none"> ▪ Improve cross-sell / up-sell opportunities ▪ Improve targeting of marketing offers ▪ Integrate financial forecasting with predictive analytics | <ul style="list-style-type: none"> ▪ Ability to align the right customer representative with the right client ▪ Predictive model used to drive decisions continuously, in real-time ▪ KPI's defined for measurement of customer performance ▪ Team dedicated to providing new customer insights ▪ Ability to provide executive management with timely accurate forecasts | <ul style="list-style-type: none"> ▪ Customer segmentation tool ▪ Real-time collection method ▪ Customer Relationship Management (CRM) software ▪ Real-time reporting and alerting |

Source: Aberdeen Group, February 2010

Best-in-Class Strategies

Altogether, survey respondents were asked to choose from 12 possible strategies to deal with the pressures they are currently facing. Overall, improved targeting of marketing offers was the most common strategy - but that doesn't reflect the full story. Figure 3 contrasts the top strategies chosen by the Industry Average and Laggard groups combined (collectively called all others) with Best-in-Class organizations.

Figure 3: Top Strategies vary by Maturity Class



* Survey respondents were asked to choose two top pressures

Source: Aberdeen Group, February 2010

What is particularly noticeable is that the top strategy for Best-in-Class organizations, improving cross-sell and up-sell opportunities, only ranks fifth as a priority for the other 80% of organizations (all others).

Aberdeen Insights — Strategy

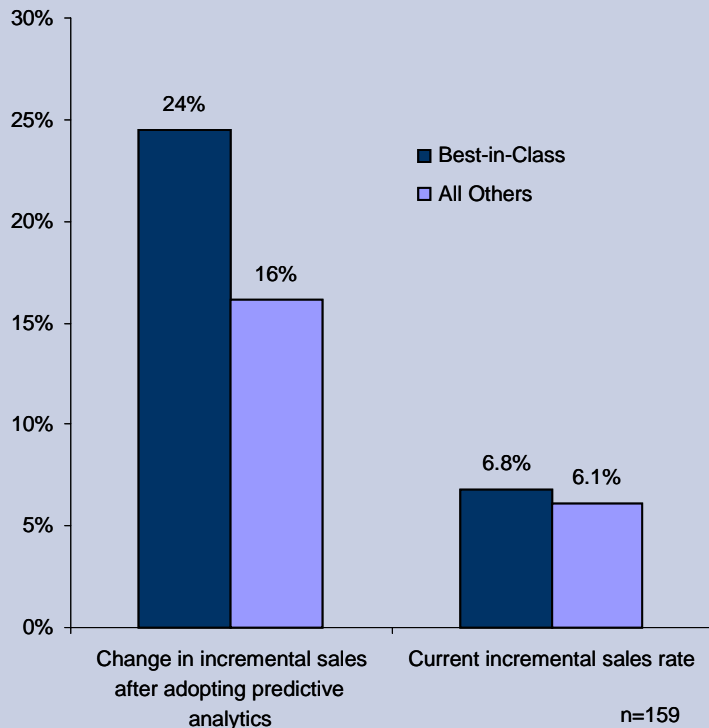
Cross-sell and up-sell are, by their very definition, strategies that are focused on increasing sales to existing customers. As a strategy, that's a great way to improve profit margins because many of the overhead costs associated with sales and marketing are avoided or reduced. For example, the marketing expense of creating brand awareness and educating a potential customer about your company and its values disappears. In tandem with that expense, the time delay in the sales and marketing cycle that goes along with it also vanishes.

The success of Best-in-Class organizations at driving sales performance is reflected in their incremental sales rate (Figure 4). The Best-in-Class enjoy higher incremental sales rates (6.8% versus 6.1%) than all others, and have also increased that rate more than all others since they begun using predictive analytics (24% versus 16%).

continued

Aberdeen Insights — Strategy

Figure 4: The Best-in-Class Drive Incremental Sales



Source: Aberdeen Group, February 2010

Improving the targeting of marketing can also lead to incremental sales growth and a reduction in marketing costs. By better targeting of direct mail, for example, companies can cut marketing costs by reducing the total number of pieces they send out. But, the overhead expense and sales cycles time required to create brand awareness remain.

Prioritizing up-sell and cross-sell reduces the cost of sale, and leads to a shorter sales cycle, on average. That's one reason why Best-in-Class organizations have been able to demonstrate higher operating profits and better increases in profit margins.

In the next chapter, we will see what the top performers are doing to achieve these gains.

Chapter Two: Benchmarking Requirements for Success

The selection of predictive analytics and data mining technologies and their integration with business processes plays a crucial role in the ability to turn these strategies into profit.

Case Study — Regional Property and Casualty Insurer

This large North American property and casualty insurer established almost 40 years ago handles a million claims a year in an environment that can be highly litigious. The company is positioning itself to use predictive analytics more widely in order to develop a more holistic view of enterprise risk and fraud. While fraud is part of everyday life for an insurance company, this insurer has historically enjoyed much lower rates of fraud than the Industry Average, which can run as high as 10% of revenue. But, it faces a classic problem faced by many organizations – put simply, it doesn't know what it doesn't know. As one of its directors said, "Are we really just not seeing the risk and the fraud around it, or are we really operating in a community and a business that's less subject to fraud than our peers in other places?" Both conventional business intelligence and predictive analytics are being used to develop a more systematic view of enterprise and operational risk.

Currently though, predictive analytics is either used or planned for use in many areas – such as claims, underwriting, and actuarial processes. In claims, for example, most insurers aim for highly automated (“straight-through”) claims processing to speed settlement, provide high quality customer service and reduce their own operating costs. While speeding up processing of legitimate claims is desirable however, trapping fraudulent claims is also necessary. Typically, this is achieved by automated rules that examine each claim and flag those that may be fraudulent for more detailed examination. This insurer is taking this a step further by applying predictive technology to analyze many factors early in the claims process to determine if they are likely to be valid. In this way, the insurer aims to block a higher proportion of fraudulent claims and also reduce the number of false positives that delay the processing of some valid claims. The claims engine will be continuously optimized, refining the rules, to drive high throughput but with more accuracy.

Predictive models are also used for planning and budgeting. The rates set by the insurer use models based on a long history of claims experience, business growth, and actuarial modeling, for example. Those insurance rates, overseen by a government regulator, provide the basis for revenue forecasts and all budgeting decisions that flow from those projections.

Fast Facts

- √ 23% of all survey respondents currently using predictive analytics describe their organization as "risk averse"
- √ 36% of all survey respondents **not** currently using predictive analytics describe their organization as "risk averse"

Competitive Assessment

Aberdeen Group analyzed the aggregated metrics of surveyed companies to determine whether their performance ranked as Best-in-Class, Industry Average, or Laggard. In addition to having common performance levels, each class also shared characteristics in five key categories: (1) **process** (the approaches they take to execute daily operations); (2) **organization** (corporate focus and collaboration among stakeholders); (3) **knowledge management** (contextualizing data and exposing it to key stakeholders); (4) **technology** (the selection of the appropriate tools and the effective deployment of those tools); and (5) **performance management** (the ability of the organization to measure its results to improve its business). These characteristics (identified in Table 3) serve as a guideline for best practices, and correlate directly with Best-in-Class performance across the key metrics.

Table 3: The Competitive Framework

| | Best-in-Class | Average | Laggards |
|---------------------|--|---------|----------|
| Process | Predictive model used to drive decisions continuously, in real-time | | |
| | 48% | 32% | 23% |
| Organization | Team dedicated to discovering new customer insights | | |
| | 46% | 37% | 27% |
| | Ability to align the right customer representative with the right client | | |
| | 55% | 28% | 24% |
| Knowledge | Business staff can use predictive models without dedicated statistics expert | | |
| | 38% | 35% | 19% |
| | Ability to provide executive management with timely, accurate forecasts | | |
| | 50% | 41% | 31% |
| Technology | Budgeting, planning and forecasting linked to predictive models | | |
| | 44% | 36% | 35% |
| | Customer segmentation tool | | |
| | 58% | 54% | 46% |
| | Real-time analytics collection method | | |
| | 63% | 47% | 40% |
| | Real-time reporting and alerting | | |
| 60% | 44% | 38% | |
| Performance | Customer relationship management software | | |
| | 64% | 55% | 48% |
| | Key performance indicators for measurement of customer performance defined | | |
| | 64% | 59% | 41% |

Source: Aberdeen Group, February 2010

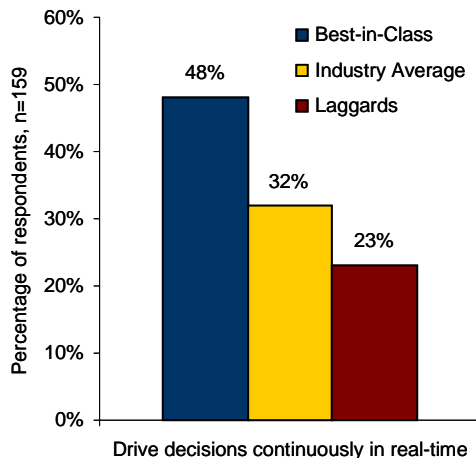
Capabilities and Enablers

Based on the findings of the Competitive Framework and interviews with end users, Aberdeen’s analysis of the Best-in-Class reveals that there are a number of capabilities and competencies that help to deliver top level performance.

Process Management

The benefits of predictive analytics technology can be reaped in many ways. Although it can be used in isolation, it is commonly integrated with, or embedded into, other software applications. That type of tight coupling can give rise to the Best-in-Class capability shown in Figure 5.

Figure 5: Predictive Analytics Drives Decisions in Real-Time



Source: Aberdeen Group, February 2010

“We have several predictive models embedded in our applications. These monitor daily sales from the travel agents, and there are certain areas that we watch and particular behaviors that we look out for.”

~ Becky Briggs, Senior Manager, ARC

Tightly integrating predictive capabilities with other software applications can be done to support many different business processes and scenarios. These include:

- The optimization of physical assets in, for example, manufacturing environments. In this scenario, predictive analytics can be used to monitor manufacturing processes and machine performance in real-time. This can lead to increased yields and higher asset utilization, since unscheduled machine downtime and out of tolerance manufacturing processes can be avoided by more accurately forecasting the need for machine downtime and maintenance.
- Detecting and reducing fraud. Fraudulent transactions and events stream through computer applications daily, intermingled with legitimate transactions. Common businesses where fraudulent behavior can occur include any purchase where payment is made via credit card, and also the insurance industry where claims may be falsified. Peculiar characteristics of transactions can easily be trapped and automatically trigger further, manual investigation. One example is airline travel booked at short notice, where a would-be culprit aims to travel before the fraud can be investigated and the

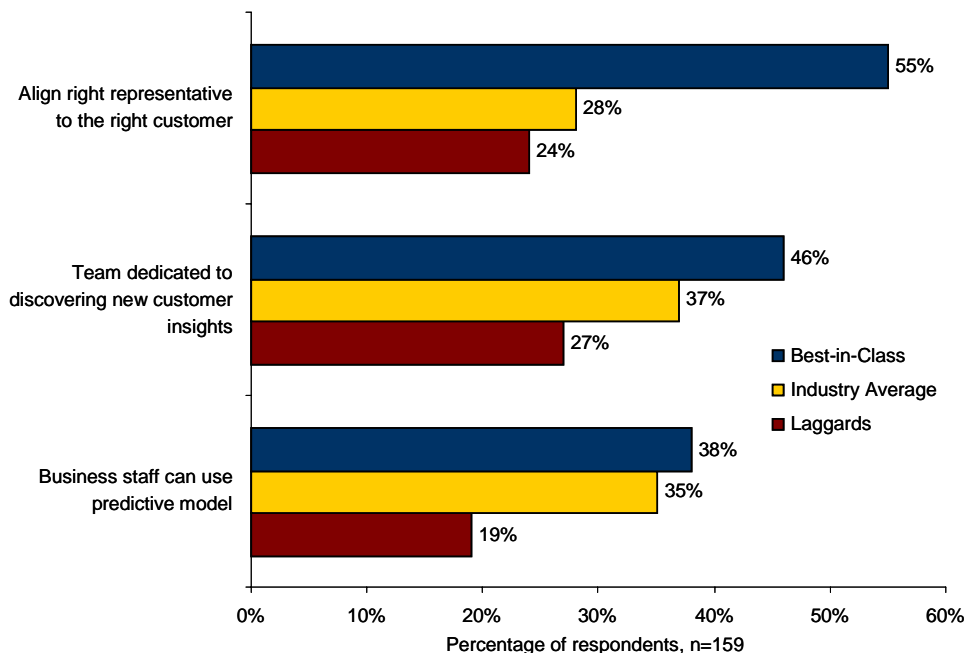
transaction invalidated. Similarly, in the auto insurance industry, claims that involve significant personal injuries to a car's occupants, even though the vehicle was traveling at a modest speed, would also often be marked for more detailed investigation. While some of these triggers are relatively simple and can easily be codified in software, applying a predictive model to the task can improve the accuracy of the process. In the case of auto insurance, for example, that would lead to more fraudulent behavior being detected, and fewer legitimate claims being delayed as they were flagged as potentially bogus.

- **Maximizing cross-sell and up-sell opportunities.** A predictive model that is plugged into a Customer Relationship Management (CRM) or call center application can yield dividends. For example, imagine a customer service representative whose objective is to cross-sell products to existing banking customers. A predictive model or scoring system could be deployed to respond in real-time as information learnt in the dialog with the customer is added to the model. In this way, the most appropriate product offer can be made to the customer based on both historical and new information.

Organization

Several organizational traits and characteristics were important to deliver Best-in-Class performance (Figure 6). For example, Best-in-Class organizations in Aberdeen's survey were almost twice as likely to be able to align customers with an appropriate customer representative as those organizations benchmarked as Industry Average (55% versus 28%).

Figure 6: A Customer-Centric Organization is Key



Source: Aberdeen Group, February 2010

This capability can be achieved in a number of ways, not all of them necessarily high-tech or sophisticated. The intent though is usually to maximize sales or increase customer loyalty - which in most businesses are strongly intertwined. In the sales function, for example, enterprises that sell to other businesses are often marketing a range of products, many of which can be highly sophisticated and specialized. Such industries would include, medical devices, enterprise software, industrial machinery, aerospace and defense and so on. The same holds true for some businesses that sell to consumers, such as financial products for example.

In these situations, a specialized product needs a specialized sales representative (or team) that goes along with it. These specialized staff are typically "narrow and deep," understanding just one or two products in intimate detail. It's critical for customer satisfaction and sales revenue that these highly skilled staff are engaged with the customer as and when necessary, without undue delay.

Almost half (46%) of Best-in-Class respondents also report that they have a team dedicated to understanding more about their customers in order to gain new insights. Most organizations take a tried and tested, fairly orthodox and low-tech approach. This consists of conducting customer focus groups, customer surveys and analyzing feedback from customers that is gathered from channels such as email and call centers. That information is then funneled back into planning - planning sales and marketing strategies, product enhancements or new products, and budget allocation.

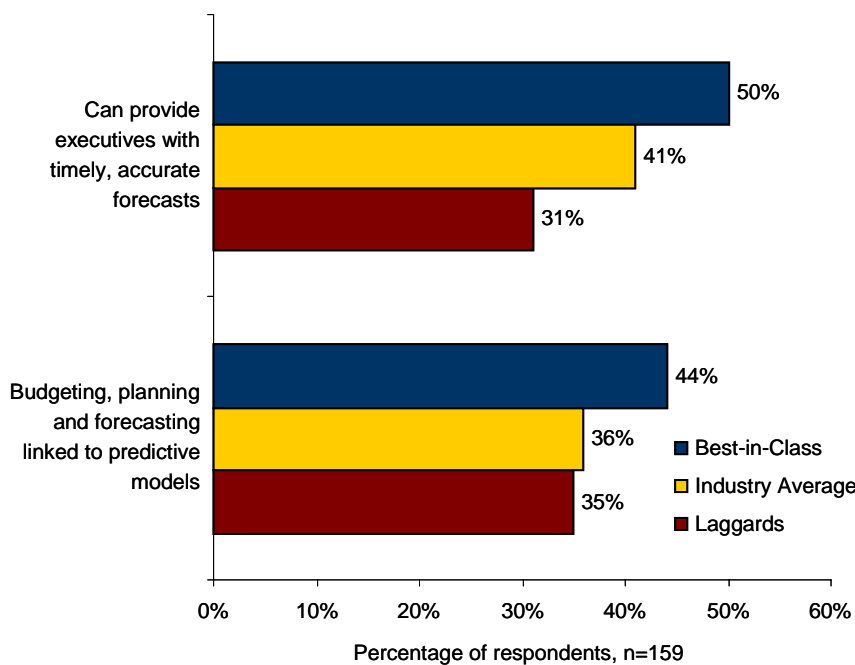
Insights can also be found in the mass of transactional data that most organizations accumulate. For example, many companies that manufacture and sell products to other businesses will have a computerized record of which customer bought which products and when. Most likely, they will also have a record of trouble tickets and support requests for each of those customers too. Mining these sources can give rise to many insights that can help to drive marketing campaigns or product innovation for instance. More advanced technologies, like text or sentiment analysis are can be used to extract useful intelligence from unstructured data, such as emails, transcripts of customer services calls, or instant messaging chat.

A third Best-in-Class correlation is that business staff is able to use predictive tools without the need for a dedicated statistical modeling expert. While both Best-in-Class and Industry Average enterprises are almost equally likely to do this, only half as many Laggard organizations have this capability as Best-in-Class organizations (38% versus 19%). In our research survey, respondents were asked what barriers they faced to the adoption of predictive analytics. One of the top concerns, chosen by 48% of survey respondents, was a lack of appropriate predictive analytics skills. In this light, any predictive or data mining technology that can be gainfully exploited by employees without a deep technical understand of either software tools or statistical methods will naturally foster and encourage the more widespread use of predictive analytics and data mining - leaving aside any software licensing constraints for the moment.

Knowledge Management

Best-in-Class performance is strongly linked to an organizations ability to integrate forecasts into the budgeting and planning processes, and to propagate those forecasts up to the highest levels of management (Figure 7). Businesses in some industries achieve this more naturally than others. An example would be the insurance industry. Actuaries in the insurance industry make detailed, professional assessments of risk. Those assessments can be used to gauge the potential financial impact of losses, and determine rates and premium schedules accordingly. Rigorously using mathematical models to forecast risk and related financial performance is an intrinsic - and vital - part of doing business.

Figure 7: Accurate Forecasts are Essential to Business Planning



Source: Aberdeen Group, February 2010

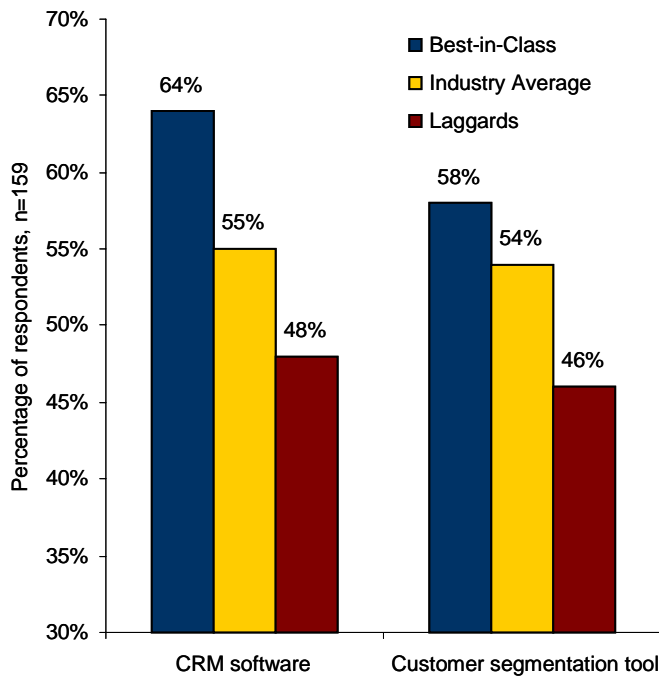
In other areas, such as grocery retailing, forecasting models are used to make informed decisions about what goods to buy, when to buy them, and what price to pay. Such models can also be used as a foundation for senior management's revenue forecasts.

Technology

The key enabling technologies that lead to Best-in-Class performance can be split into two groups. The first group is customer-related applications (Figure 8), with both CRM software and customer segmentation tools being used more widely by organizations ranked as Best-in-Class. The precise use of predictive and data mining tools varies, but in both cases the intent is to build a clearer and deeper understanding of customers. In most instances,

the CRM software is a commercially developed product sold under license, although some home-grown applications do also exist. By contrast, the customer segmentation tool is often specifically developed for a particular enterprise using data mining software.

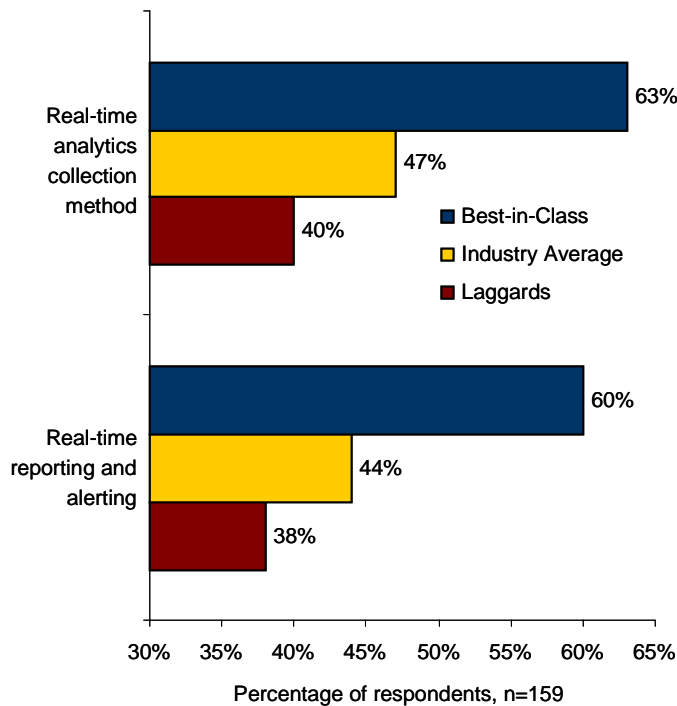
Figure 8: Best-in-Class use Customer-Oriented Applications



Source: Aberdeen Group, February 2010

The second group of enabling technologies is associated with latency of data, and highlights the need for businesses to have faster access to - and faster reaction to - changing business events (Figure 9).

Figure 9: Real-time Capabilities Enhance Data Mining



"One of the questions we constantly challenge ourselves with is 'Are we really just not seeing the risk and the fraud around it, or are we really operating in a community and a business that's less subject to fraud than our peers in other places?'"

~ Director, Business Intelligence Competency Center

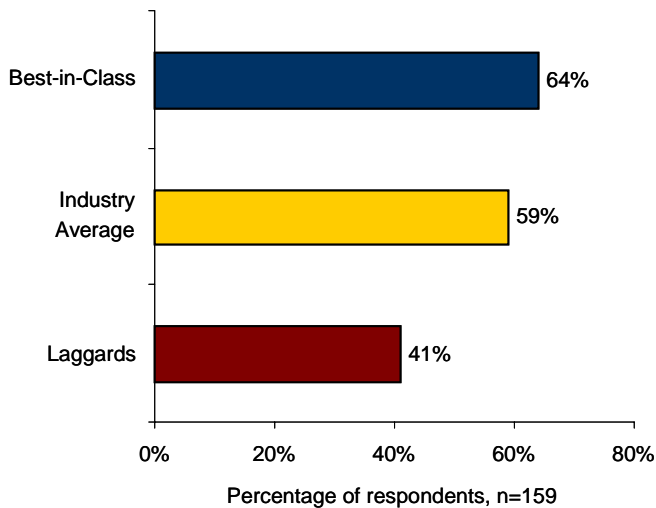
Source: Aberdeen Group, February 2010

Real-time data feeds are essential for some business situations. Examples include the timely detection of credit-card fraud and the ability to propose the right offer, dynamically, to a customer or potential customer calling into a contact center. In many cases, the need for real-time reporting and alerting mirrors the need for real-time updates from transactional data. After all, it is pointless tapping a real-time data feed to detect a potentially fraudulent credit-card transaction if nobody is alerted in a timely way to investigate further and take the appropriate action. Ad hoc reporting from predictive models can be useful too. For instance, real-time access to a sales forecasting model can help ensure that procurement staff orders the right quantity of the right goods at the right price.

Performance Management

Aberdeen's research survey asked questions on four different performance management capabilities. Only one emerged as a Best-in-Class characteristic, however. Over two-thirds (71%) of all survey respondents currently using predictive analytics technologies deploy them to assist in sales and marketing performance. Given that fact, it might not be surprising that the measurement of customer performance is one of the keys to achieving Best-in-Class performance (Figure 10).

Figure 10: Measurement of Customer Performance is Key



Source: Aberdeen Group, February 2010

The particular metrics used vary significantly from industry to industry, and also vary by application area. KPIs may include, for example, incremental sales gained from a marketing campaign, a reduction in fraud, or the amount lost due to bad debt.

Aberdeen Insights — Technology

One of the technologies high on the list for adoption within the next 12 months is scoring software. Currently used by 43% of all survey respondents (and 42% of Best-in-Class), 38% of Best-in-Class organizations plan to adopt this class of software in the next 12 months. Scoring is the process of taking a predictive model and applying it to a much larger set of data, such as customer records. The intent is to determine a "score" for each customer, the score being that customer's likelihood of responding to a particular sales or marketing activity - such as an online advertisement. Scoring is also used to detect fraudulent transactions or to flag customers that are unlikely to meet contractual or financial obligations.

Scoring technology can be used in the back-office in a batch-processing approach to target direct mail more productively, for example. Alternatively, scoring can be employed in real-time to prioritize sales leads and prospects that are inbound to a call center or a website.

Chapter Three: Required Actions

Whether a company is trying to move its performance in the use of predictive analytics and data mining from Laggard to Industry Average or Industry Average to Best-in-Class, the following actions will help spur the necessary performance improvements:

Laggard Steps to Success

- **Improve the ability to align the right company representative to the right customer.** Best-in-Class companies are more than twice as likely, on average, to be able to achieve this than Laggard organizations (55% compared to 24%). Achieving this has clear and direct consequences for customer retention, sales revenue and profitability. Customers quickly become frustrated if they are unable to work with the right person within a company to understand different product and service offerings, or to get appropriate help when they need it. Providing poor customer service in this way leads to customer defection, reduced sales and poor profit margins.
- **Consider if it is appropriate to use predictive technologies to help drive decisions in real-time.** Making timely decisions is a critical skill in any business. Best-in-Class organizations are far more likely to be applying predictive models to assist in that task than Laggards - more than twice as likely (48% versus 23%). In these situations, it is typically operational decision making, rather than strategic decision making, which is involved. Typical applications that could be exploited include detecting and acting on fraudulent behavior, and optimal routing of calls within a contact center.
- **Consider how business users may be empowered to use predictive models and tools without the assistance of dedicated statistical modelers.** Thirty-eight percent (38%) of Best-in-Class organizations have predictive tools used directly by business users, without the need for specialized statistical skills. On average, only half as many Laggard organizations (19%) can achieve this. Overall, across all survey respondents, the lack of appropriate skills is cited as one of the top reasons that hinder the adoption of predictive analytics and data mining. Putting an appropriate, easy to use solution directly into the hands of business users is one way to overcome this bottleneck and deliver superior results.

Industry Average Steps to Success

- **Create and manage a library of predictive modeling templates.** Thirty-seven percent (37%) of Best-in-Class organizations already have this capability, compared to just 18% of the Industry Average maturity class. This helps to foster more

Fast Facts

- √ 12% of survey respondents currently use sentiment analysis software
- √ 19% plan to implement sentiment analysis software within 12 months

innovation in the use of predictive analytics. For example, Aberdeen's survey found that, on average, Best-in-Class organizations have successfully used 4.1 different predictive modeling approaches - association rules, clustering, neural networks - and so on. By comparison, Industry Average organizations have successfully used an average of 3.3 different modeling approaches.

- **Understand the skills and talents of customer facing staff.** This is a key precursor for the recommendation below, aligning the right customer representative with the right customer. Unless the skills, talents and competencies of individual staff members and teams are well understood, this alignment cannot be optimal. While 47% of Best-in-Class organizations have this knowledge, only 30% of Industry Average organizations possess it.
- **Improve the ability to align the right company representative to the right customer.** Best-in-Class companies are almost twice as likely, on average, to be able to achieve this than Industry Average organizations (55% compared to 28%). Predictive analytics can be used to prioritize sales leads, for example, assigning the leads most likely to convert into sales to the top sales representatives, or directing the lead to a specialist team based on a prediction of which product someone is most likely to buy. Providing superior customer sales and service aids customer retention, can increase sales and ultimately grow profit margins.

Best-in-Class Steps to Success

- **Define metrics to measure the success of predictive analytics and data mining initiatives.** Currently, only 41% of Best-in-Class organizations have key performance indicators defined to measure the success of their data mining projects. Such metrics are very application specific, so might include response rate to a marketing campaign, or the reduction in bad debt. An additional 52% of Best-in-Class organizations indicate that they are planning to introduce appropriate metrics.
- **Establish the linkage between metrics used to measure the success of predictive analytics and the metrics used to measure the business performance.** It is vital that KPIs defined to measure the success of predictive projects are aligned with the metrics used to judge business performance. For example, marketing response rate might be used quite validly as a measure for the success of a predictive model. If a predictive model then significantly increased the marketing response rate, that might be hailed as a success. However, it may be counter-productive if those additional marketing responses do not lead to increased sales, actually increasing the cost of sales overall. This can be avoided by establishing the linkage between data mining metrics and business performance metrics. While only 44% of Best-in-Class organizations

currently do this, the remaining 56% have recognized that it is a necessary step, and plan to establish this linkage.

- **Ensure that predictive technologies can easily be integrated with business applications.** This is a strong priority for Best-in-Class enterprises, with 67% planning to take steps to improve the ease of integration. This is very necessary, as although data mining technologies can be used in isolation, often they are also integrated into existing business processes and workflows. When choosing predictive technologies, organizations should ensure that ease of integration is evaluated.

Aberdeen Insights — Summary

While interest in predictive analytics is strong, adoption is still somewhat lagging with only 159 organizations using this class of software from more than 330 survey respondents in total. A further 52 survey respondents have budget or plans for predictive analytics initiatives in the next year.

So, why is predictive analytics a tool for tough times? On average, users of predictive analytics in Aberdeen's survey have achieved a 1% improvement in operating profit margins over the last year, and a year over year increase in customer retention of 6%. Survey respondents that have not yet adopted predictive technologies experienced a 2% decline in profit margins, and a 1% drop in their customer retention rate.

Appendix A: Research Methodology

Between January and February 2010, Aberdeen examined the use, the experiences, and the intentions of more than 150 enterprises using predictive analytics and data mining in a diverse set of enterprises.

Aberdeen supplemented this online survey effort with interviews with select survey respondents, gathering additional information on predictive analytics strategies, experiences, and results.

Responding enterprises included the following:

- *Job title:* The research sample included respondents with the following job titles: CEO / President (21%); Manager (21%); EVP / SVP / VP (17%); Director (15%); Staff (10%); Consultant (9%); and other (7%).
- *Department / function:* The research sample included respondents from the following departments or functions: marketing (19%); business development / sales (17%); IT (14%); corporate management (11%); product development / engineering (6%); finance / administration (5%); and other (28%).
- *Industry:* The research sample included respondents from the following industries: IT consulting / services (19%); education (18%); software (14%); financial services (8%); retail (6%); market research (6%); media / public relations (5%); insurance (4%); industrial product manufacturing (4%); other (16%).
- *Geography:* The majority of respondents (67%) were from North America. Remaining respondents were from Europe (19%), the Asia-Pacific region (9%), the Middle East / Africa (3%) and South / Central America (2%).
- *Company size:* Twenty-nine percent (29%) of respondents were from large enterprises (annual revenues above US \$1 billion); 24% were from midsize enterprises (annual revenues between \$50 million and \$1 billion); and 47% of respondents were from small businesses (annual revenues of \$50 million or less).
- *Headcount:* Forty-one percent (41%) of respondents were from large enterprises (headcount greater than 1,000 employees); 25% were from midsize enterprises (headcount between 100 and 999 employees); and 34% of respondents were from small businesses (headcount between 1 and 99 employees).

Study Focus

Responding executives and managers completed an online survey that included questions designed to determine the following:

- √ The degree to which predictive analytics and data mining are deployed in their operations and the financial implications of the technology
- √ The functional areas and business processing employing predictive analytics
- √ Current and planned use of predictive analytics to aid strategic and operational activities
- √ The benefits, if any, that have been derived from data mining initiatives

The study aimed to identify emerging best practices for data mining and predictive analytics usage and to provide a framework by which readers could assess their own management capabilities.

Table 4: The PACE Framework Key

| Overview |
|--|
| <p>Aberdeen applies a methodology to benchmark research that evaluates the business pressures, actions, capabilities, and enablers (PACE) that indicate corporate behavior in specific business processes. These terms are defined as follows:</p> <p>Pressures — external forces that impact an organization’s market position, competitiveness, or business operations (e.g., economic, political and regulatory, technology, changing customer preferences, competitive)</p> <p>Actions — the strategic approaches that an organization takes in response to industry pressures (e.g., align the corporate business model to leverage industry opportunities, such as product / service strategy, target markets, financial strategy, go-to-market, and sales strategy)</p> <p>Capabilities — the business process competencies required to execute corporate strategy (e.g., skilled people, brand, market positioning, viable products / services, ecosystem partners, financing)</p> <p>Enablers — the key functionality of technology solutions required to support the organization’s enabling business practices (e.g., development platform, applications, network connectivity, user interface, training and support, partner interfaces, data cleansing, and management)</p> |

Source: Aberdeen Group, February 2010

Table 5: The Competitive Framework Key

| Overview | |
|--|---|
| <p>The Aberdeen Competitive Framework defines enterprises as falling into one of the following three levels of practices and performance:</p> <p>Best-in-Class (20%) — Practices that are the best currently being employed and are significantly superior to the Industry Average, and result in the top industry performance.</p> <p>Industry Average (50%) — Practices that represent the average or norm, and result in average industry performance.</p> <p>Laggards (30%) — Practices that are significantly behind the average of the industry, and result in below average performance.</p> | <p>In the following categories:</p> <p>Process — What is the scope of process standardization? What is the efficiency and effectiveness of this process?</p> <p>Organization — How is your company currently organized to manage and optimize this particular process?</p> <p>Knowledge — What visibility do you have into key data and intelligence required to manage this process?</p> <p>Technology — What level of automation have you used to support this process? How is this automation integrated and aligned?</p> <p>Performance — What do you measure? How frequently? What’s your actual performance?</p> |

Source: Aberdeen Group, February 2010

Table 6: The Relationship Between PACE and the Competitive Framework

| PACE and the Competitive Framework – How They Interact |
|--|
| <p>Aberdeen research indicates that companies that identify the most influential pressures and take the most transformational and effective actions are most likely to achieve superior performance. The level of competitive performance that a company achieves is strongly determined by the PACE choices that they make and how well they execute those decisions.</p> |

Source: Aberdeen Group, February 2010

Appendix B: Related Aberdeen Research

Related Aberdeen research that forms a companion or reference to this report includes:

- [Data Management for BI: Strategies for Leveraging the Complexity and Growth of Business Data](#); December 2009
- [The Economic Outlook for 2010: High Growth? Low Growth? No Growth?](#); December 2009
- [Risk Aversion Leads to Predictive Analytics](#); November 2009
- [Performance Management in the Midmarket](#); November 2009
- [BI for the C-Suite: Top Level Visibility Drives Top Notch Cash Flow](#); October 2009
- [BI or Bust: Best Practices for Using Business Intelligence During a Recession](#); July 2009
- [From Data Discovery to Business Insight](#); April 2009
- [Operational Business Intelligence](#); March 2009
- [Collaborative Business Intelligence](#); March 2009
- [Financial Planning, Budgeting and Forecasting](#); January 2009

Information on these and any other Aberdeen publications can be found at www.aberdeen.com.

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