

Predictive intelligence: a new frontier in achieving market leadership

By Dr Pawan Singh and Dr Mohamed Latib

Rooted in rigorous scientific methodologies, predictive intelligence provides on-demand conversion of attitudinal and likely-behavior data into validated insights. As managers peer into the future with increased certainty, the results can be truly transformational.

MODELING BUSINESS INTELLIGENCE

Business intelligence (BI) technology has been advancing in response to a critical need to devise valid plans of action in the face of increasing uncertainty in the global business environment. BI, defined as the ability to draw insights from stores of existing data, offers a powerful starting point for making better decisions. Numerous case histories indicate that the impact of BI-driven decisions can result in highly significant strategic competitive advantage and cost savings running into millions of dollars. Today the term business intelligence is applied to a wide range of applications, many no more than charting and graphic applications. This does a great disservice to the perceived value of genuine business intelligence technology. To add clarity to the field, Dr Singh developed a model for defining business intelligence in 2001, which divides business intelligence into three classes based on the source of the underlying information. They are:

INFERENTIAL INTELLIGENCE

Inferential intelligence is the drawing of inferences from disconnected pieces of information available either publicly or collected through secondary research. Data gathering and classification has been automated to a considerable extent using the internet and semantic analysis tools. Still, the ability to draw intelligent inferences resulting in better decisions is primarily dependent on the diagnostic skill of the analyst.

DERIVED INTELLIGENCE

The ability to analyze and draw conclusions from transactional, demographic and other types of stored data forms the basis for derived intelligence. Data mining, business analytics and predictive analytics are examples of derived intelligence, and these terms are often used interchangeably with business intelligence. Clearly the value of derived intelligence applications rests on the quality of the data and the validity of the algorithms used in its analysis.

Because derived intelligence is based on historical information, it is a lagging indicator whose value diminishes rapidly with time. As the business environment has become more volatile, the value of derived intelligence is increasingly dependent on the quality and newness of the underlying data. This has resulted in the need to maintain large and expensive software systems, creating uncertainty that the value of such intelligence will be worth its cost. The checkered history of customer relationship management (CRM) systems provides a good example of that uncertainty.

PREDICTIVE INTELLIGENCE

A key driver for adoption of predictive intelligence systems is the businesses' need to know the customer as a system of dispositions and behaviors.

Appropriately, rigorous scientific methods can accomplish this even though people seem unpredictable. A common misconception about science is that it is all about certainty, when in reality probabilistic scientific applications are far more pervasive than applications of certainty.

Predictive intelligence (P1) is based on real-time sampling of attitudinal and likely-behavior data. P1 is rooted in rigorous scientific methodologies and provides on-demand conversion of data into insights and intelligence through advanced analytics and visualization tools.

Predictive intelligence comes from analyzing responses to questions asked of the very people that will be affected by it. Its power springs from this direct correlation. Predictive intelligence is the most coveted form of business intelligence because it provides the leading indicators that businesses need.

The underlying data used in PT systems is often collected using questionnaires or surveys. Our research, however, indicates that a vast majority of these surveys do not apply the rigor or possess the validity to qualify as a solid foundation for predictive intelligence. Data that does not correctly represent the underlying population, or that does not meet validity criteria, produces results that are inaccurate at best, and often quite harmful. The criticality of scientific rigor and validity to predictive intelligence shouldn't be understated.

Advanced predictive intelligence systems convert these insights into metrics that drive strategic action and measure its effectiveness

over time. The effect can be truly transformational and can help businesses achieve sustainable competitive advantage.

THE PREDICTIVE INTELLIGENCE PROCESS

Predictive intelligence is a process. It uses an intellectual framework that combines thought leadership, deep experience, an understanding of key scientific, business and behavioral issues, scientific rigor, and sophisticated predictive modeling. Each component is equally important to the generation of high-quality, actionable, strategy-level insights.

- **Intellectual framework:** Each PT project begins by defining the elements critical to the program's success: specific objectives, primary response audience(s) and respondent qualifications.
- **Questionnaire design:** Advanced survey design, including intelligent branching and response validation, is necessary to ease data collection and protect data from bias or other quality-eroding effects.
- **Deployment:** To increase response rates respondents should be allowed to control the timing and pace of their participation. Multiple levels of user identification and password protection help to assure the participants that their responses are secure. Third-party anonymity can also be useful in eliminating respondent bias.
- **Data collection and validation:** Data collection should include response validation, checking for such things as mandatory and appropriate information and duplicate responses.
- **Analysis and reporting:** The analysis and reporting process should focus on identifying actionable strategies to address specific research objectives, turning raw data into reliable information for decision-making. Results should be delivered in a presentation format that's easy to understand and effectively conveys the research findings.
- **Metrics development:** The development of appropriate metrics helps organizations to measure and benchmark their current performance and monitor it as it changes over time. To be transformational these metrics must relate directly to the strategic goals of the company and measure characteristics that the organization can influence.

RAISING THE ORGANIZATIONAL KNOWLEDGE LEVEL

Predictive intelligence allows businesses to quickly understand current market conditions, evaluate market opportunities and determine the potential for success when entering new markets or launching new products. It provides top management with reliable data for strategy implementation.

Often these transformational effects are realized as a highly valuable outgrowth of intelligence projects that were originally

undertaken for non-transformational reasons. York International experienced this when it chose PeriscopeSOX, an intelligence system from PeriscopeIQ to help the company comply with the new Sarbanes-Oxley regulations. Ultimately, the system provided much more. "The primary goal of implementing this solution was to comply with the law," says Ian Howells, Director, Corporate Control at York, "but PeriscopeSOX has provided us with a business excellence tool that helps us identify and address issues more efficiently."

Web-based predictive intelligence systems are able to reach out and collect accurate data from areas once obscured by their separation from the business. Ingersoll-Rand Waterjet (IRWJ), a leading global maker of ultra-high pressure waterjet machinery, is able to collect valid intelligence from their end-users even though they are separated from them by a network of OEM manufacturers who use IRWJ components.

"Utilizing the PeriscopeIQ online survey solution, the project took two weeks from start to finish," says Greg Mort, Manager, IRWJ Marketing and Services. "A paper-based method would have taken us quite a few months to complete, without the quality of data, response rate and strategic analysis PeriscopeIQ was able to provide. The solution was cost-effective and helped us to quickly transform our relationships with our OEMs and significantly increase our customer satisfaction."

IDEX Corporation, a global manufacturing and maker of the Hurst Jaws of Life rescue tool, needed to have a clear understanding of the competitive environment and the future of their market, and to determine how to maximize its relationships with its distributors and customers.

Owing to the advanced capabilities of predictive intelligence technology from PeriscopeIQ the original survey was transformed into a rigorously validated study that covered a wide range of areas, including critical-to-customers issues, competitive rankings, product features, end-user preferences, competitor behavior, market conditions and sales predictions.

The survey's analytical results enabled the calculation of strategic metrics for the top management on critical customer issues and brand perception, loyalty and equity. A 'customer satisfaction study' became a strategic business tool designed to help achieve operational excellence through organizational transformation.

Derived and inferential intelligence no longer provide the advantage that industry leaders demand to reduce uncertainty and risk in a rapidly changing global marketplace. The need to know is now – to create new solutions, to predict new markets, and to enhance profitability and power. Only predictive intelligence can meet the growing demand to know now. ■

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