Hurwitz ValuePoint: Predixion

Predixion HURWITZ VICTORY INDEX CHALLENGER

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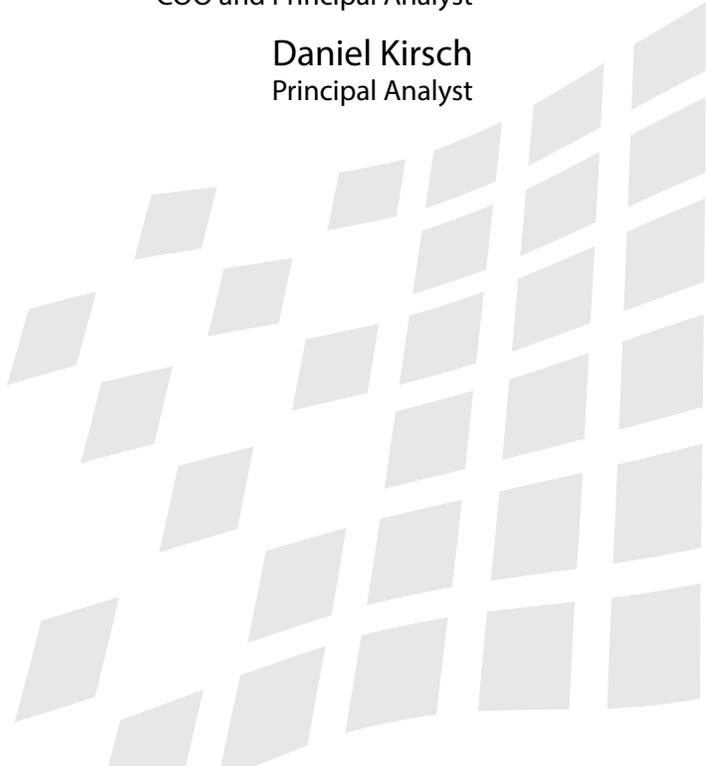
The Hurwitz Victory Index Report

Predixion is one of 10 advanced analytics vendors included in the 2014 Hurwitz & Associates report, "Advanced Analytics: The Hurwitz Victory Index Report." The research findings presented in the Victory Index Report include an assessment of each vendor, market trends, and customer best practices and use cases. Predixion, founded in 2009, received a "Challenger" rating based on its ability to deliver analytics solutions that reduce the barriers to analytics adoption for a broad spectrum of customers. The company has consistently delivered on its projected roadmap and Hurwitz views this company as a potential "Leader" or "Victor" in the advanced analytics market.

The study focuses on both vendor go-to-market strength and the vendor's strength in delivering exceptional customer experiences. Vendor go-to-market strength was evaluated through market research and extensive briefings with each vendor about their products, key innovations, go-to-market strategy, and future roadmap. Vendor customer experience strength was evaluated through online surveys and in-depth personal interviews.

This ValuePoint highlights key findings from the Victory Index and details how customers are benefitting from Predixion's advanced analytics solution.

Victory Index Research Findings

Advanced analytics is the technology that provides algorithms for the complex analysis of either structured or unstructured data. It includes sophisticated statistical models, machine learning, neural networks, text analytics, and other advanced data mining techniques. Some of the specific statistical techniques used in advanced analytics include decision tree analysis, linear and logistic regression analysis, social network analysis, and time series analysis.

Participants in the Hurwitz & Associates online survey and phone interviews shared information about their experiences with advanced analytics tools and techniques. The data scientists, statisticians, and business analysts included in our study are using advanced analytics to find patterns in previously untapped, unstructured big data sources such as machine sensor data and social media data. In addition, the users in our study are combining both structured and unstructured data sources to develop models that provide accurate predictions and improve outcomes for customers. For example, hospitals are using predictive models to reduce costly and dangerous readmission rates. Other companies are using advanced analytics to improve inventory management, provide more personalized and targeted customer service, anticipate and correct for machine failures, and reduce fraudulent activity.

The majority of the companies in our study are highly satisfied with their analytics vendor. Figure 1 illustrates end-user responses to selected questions in the survey. As illustrated, close to 60% of survey respondents rate their vendor's breadth and depth of statistical functionality as "excellent." These customers

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are using advanced analytics to achieve significant improvements in business outcomes. However, leveraging advanced analytics has not been easy for all companies included in our study. Many companies are still in the early stages of developing an analytics strategy.

There are a number of challenges that are making it hard for these organizations to fully integrate analytics into ongoing business processes. Challenges most often cited by customers include lack of analytical skills, difficulty integrating with other software, inadequate customer support, and high cost of analytics software. Although the majority of end users in our survey are satisfied with vendor performance, approximately 20% of respondents would like to see improvement in several key areas. As shown in Figure 1, approximately 20% rate their vendor either below average or average with regard to ability to support business users, integration with other software, in-database capabilities, quality of customer support, and value compared to price.

Challenges most often cited by customers include lack of analytical skills, difficulty integrating with other software, inadequate customer support, and high cost of analytics software.

Figure 1: Survey Respondent Ratings on Analytics Vendor Performance
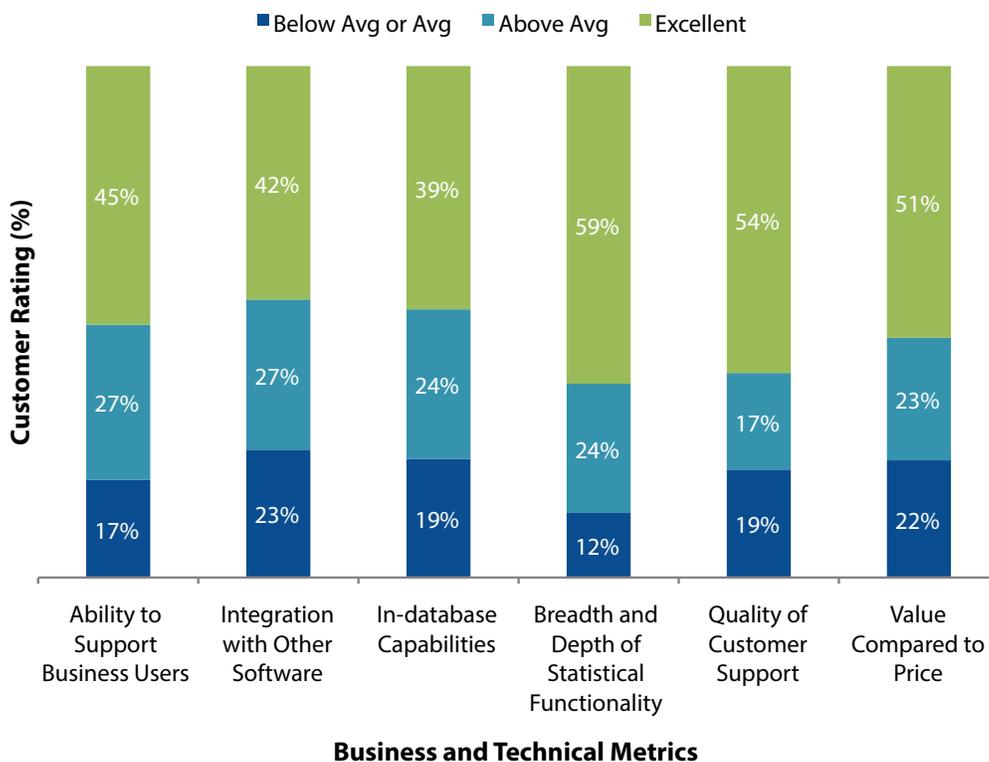
Survey respondents were asked to rate their analytics vendor on business and technical metrics. The ratings scale ranged from below average to excellent.

Source: End User Survey, Advanced Analytics: The Hurwitz Victory Index (June, 2014)

Analytics vendors recognize the challenges companies are facing and are enhancing their offerings to reduce the barriers when deploying advanced analytics. Analytics platforms need to meet the statistical requirements of

data scientists while at the same time provide capabilities that make analytics more accessible to business users. Examples of vendor responses to customer challenges are described in the three industry trends detailed below:

- **Internet of Things (IoT).** The number of connected devices is expanding exponentially and the data coming off these devices is complex in terms of type and speed. To respond to unforeseen changes and react in real-time, many organizations are developing predictive models based on the analysis of sensor data from machinery and devices. Advanced analytics enables organizations to detect and analyze hidden patterns and anomalies in large volumes of IoT data. This analysis can provide insight into emerging trends, opportunities or potential problems. For example, organizations are using machine sensor data to monitor temperature, pressure, moisture and other factors. Analysis of this streaming data enables organizations to identify deviations from accepted levels and take corrective action as needed. Predictive maintenance initiatives allow service teams to reduce equipment downtime by performing maintenance based on equipment sensor data and the analytics rather than on traditional service schedules.

- **Packaging for horizontal and vertical use cases and industries.** Rather than having to create custom analytics applications, many organizations are looking at end-to-end vertical and horizontal solutions. To meet the demand, vendors are increasingly offering pre-packaged solutions designed for industries such as healthcare or financial services. In addition, many vendors focus on horizontal analytics offerings in areas such as improving customer service, reducing customer churn, and preventing fraud. These solutions often come pre-integrated with best practices as automation for data preparation and modeling. In addition, these solutions also allow for a high degree of customization to meet specific client requirements.

- **Making analytics more accessible to business users.** Data scientists are increasingly viewed as "rock stars" at their companies as a result of the game-changing impact analytics is having on business results. Success in one area such as fraud analytics leads to demand from other functional areas and divisions of the organization. In order to keep up with demand, data scientists need to quickly and easily share information with business users. In addition, companies without in-house analytics expertise are demanding advanced analytics applications that do not require the assistance of statisticians and data scientists. As a result, vendors are increasingly offering features such as interactive visualizations, collaboration tools, and model automation.

Predixion's Vision and Strategy

Predixion's goal is to help empower business users and front-line employees with advanced analytics. To achieve this goal, Predixion offers an advanced analytics platform that simplifies the process of creating predictive analytics models and provides a flexible set of deployment options.

The Predixion platform leverages wizards and familiar tools like Microsoft Excel to make the modeling process easier. Getting predictive capabilities into the hands of business users and front-line employees also requires embedding models into user-friendly applications.

Advanced analytics enables organizations to detect and analyze hidden patterns and anomalies in large volumes of IoT data.

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Predixion has developed multiple industry and application specific partnerships with companies like the management consulting and technology services firm Accenture. Accenture and Predixion have jointly built offerings to address specific industry challenges in Healthcare and Life Sciences. The partnership was recently strengthened when Predixion's platform was imbedded into Accenture's Digital Connected Product Platform (DCPP) to jointly address the opportunities for predictive analytics within the IoT. In addition, internal data science teams at Accenture are using Predixion to create custom models for customer engagements.

Hurwitz & Associates interviewed Jeff Elton, Managing Director of Accenture Life Sciences. Elton shared with us some of the use cases that Accenture is addressing with Predixion. The use cases include patient readmissions, pharmaceutical research and development, demand planning and patient health management. Accenture's solutions integrate data from a variety of sources including data from claims, medical records, diagnostic tests, and medical devices.

Accenture is helping clients integrate analytics capabilities into business processes and become more analytics driven. The accessibility of analytics to front-line employees, easy to understand visualizations, and the ability to collaborate are three capabilities that Elton identified as important to becoming an analytics-driven organization. According to Elton, "Predixion has been able to differentiate itself by making an accessible tool with a fast learning curve and intuitive data visualization approach." In addition, he discussed the growing importance of collaboration and Predixion's ability to let users share insights.

Predixion's Advanced Analytics Platform

Predixion's advanced analytics platform, Predixion Insight™, offers an integrated set of capabilities to help organizations deploy analytics where it can be most impactful. Predixion Insight is designed to automate and hide many of the complexities involved with the modeling process. As Figure 2 illustrates, the platform offers capabilities to ingest data from a variety of devise and sources. The model can then be embedded on a device, in the cloud or at an aggregation point. Analytics insight can be delivered to front-line employees via customized applications on a variety of devices.

At the core of Predixion's platform is its patent-pending technology, the Machine Learning Semantic Model™ (MLSM). The MLSM provides the ability to encapsulate all the elements of the predictive analytics workflow into a single package. After an MLSM package is created, data scientists can reuse large portions of their modeling workflow and data transformations on new projects. The MLSM package helps to speed up and simplify the modeling and deployment process while also ensuring model accuracy.

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– Jeff Elton,
Managing Director of
Accenture Life Sciences

Figure 2: Predixion's End to End Solution for Advanced Analytics
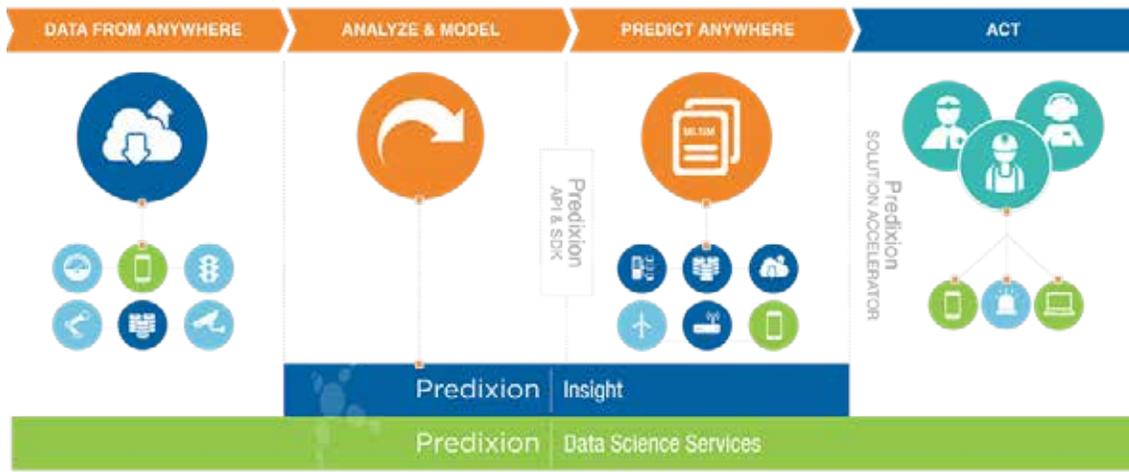
Source: Predixion, 2015

In addition to allowing for the reuse of modeling workflows and data transformations, the MLSM packages give Predixion customers the flexibility to support a variety of real-time deployments. These real-time deployments allow organizations to address Internet of Things use cases. Predixion's MLSM packages are "portable," meaning they can be deployed into a variety of environments. The model is remotely managed via Predixion Insight Server or through API access to the MLSM runtime environment. For example, an MLSM package can be deployed onto a medical device to score data in real-time at the location where the data is produced. The data never needs to be stored or transported to a data repository. The models can also be fed into applications and Complex Event Processing (CEP) servers and onto devices and sensors where the data can be scored in real-time as it arrives.

In addition to allowing for the reuse of modeling workflows and data transformations, the Machine Learning Semantic Model™ packages give Predixion customers the flexibility to support a variety of real-time deployments.

How organizations are using Predixion products for advanced analytics

The company initially gained traction with healthcare providers by leveraging predictive analytics to reduce patient hospital readmission rates. Following the company's success with healthcare providers, Predixion developed solutions for a variety of industries, including manufacturing, energy, and life sciences. A major focus for the company is on solutions to support predictive maintenance in IoT environments. In addition, Predixion has created horizontal solutions in areas such as fraud detection, marketing, and human resources. Examples of these use cases are highlighted below.

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Predictive Maintenance and the Internet of Things

Organizations in the manufacturing, transportation, mining, utility and energy industries rely on large, expensive equipment to produce revenue. When equipment fails, or is taken out of commission for maintenance, the organization loses use of its revenue-producing asset. In addition, unnecessary maintenance creates waste and takes equipment out of use. It has become a high priority for these organizations to use predictive analytics to anticipate and correct problems with equipment. The increased use of sensors coupled with the ability to analyze data in real-time has allowed organizations to capitalize on the Internet of Things by applying predictive techniques to many parts of their business.

To address predictive maintenance, Predixion's customers must first collect and pre-process machine and sensor data. A model to detect machine failure or other machine events is created by data scientists using Predixion Insight. After the model is created, it can be deployed in a variety of ways, for example, on the device itself, within a data gateway, in a centralized datacenter, or in a cloud. Real-time scoring options include the ability to deploy the MLSM package directly on the device or gateway or within a Complex Event Processing (CEP) server where multiple event streams are continuously scored in real-time. If the model detects a possible issue, an alert is pushed to front-line employees who can take immediate action.

An example of a Predixion customer with an IoT use case is a large global energy company that wanted to begin a predictive maintenance program. The company is using Predixion to predict maintenance events on oil rigs. The solution analyzes sensor and machine data along with third party data to create 2,500 scoring predictions per second on a variety of oil rig components. An easy-to-use application was built so field maintenance and operation teams can act on the data. The customer was able to implement the predictive maintenance solution in only three weeks. Since implementing the solution, they identified an oil rig failure 14 days before it was set to occur. By predicting the failure, the company was able to perform the required maintenance and reduce the time that the oil rig had to be shutdown.

Fraud

Identifying and preventing fraud is a complex challenge. The challenge of fighting fraud comes from the fact that it requires the real-time analysis of large amounts of distributed data sources. Reducing fraud is a high priority for organizations in a number of industries, including insurance, government and retail.

One of Predixion's customers, a large national healthcare insurance provider, is using Predixion Insight to fight fraud. Before implementing the Predixion solution, the insurance provider had a manual, labor-intensive document review process to identify fraudulent claims, which was inefficient.

The increased use of sensors coupled with the ability to analyze data in real-time has allowed organizations to capitalize on the Internet of Things by applying predictive techniques to many parts of their business.

The insurance provider was able to implement the fraud prevention solution in only four weeks. The customer has been able to reduce auditing time by 95%. In addition, they identified 5 million dollars of fraudulent claims immediately after running the model.

Marketing and Customer Churn

With increased competition, understanding customers is important for sales and marketing teams across industries. When an organization identifies a high-value customer who is likely to churn, the sales or marketing team can present a customized offer. In addition, segmenting customers and understanding customer preferences allows organizations to increase the effectiveness of marketing campaigns.

Predixion created a marketing optimization solution that analyzes customer data, including leads, customers, sale history, website analytics and demographics. The solution runs a model in real-time. Risk scores are then assigned to segmented profiles so that an organization can make highly targeted offers and intervene if a customer is likely to churn.

A large sales and marketing services provider is using the marketing optimization solution for customer engagements. The company wanted to use predictive analytics to help its clients create more effective marketing campaigns and reduce customer churn rates. The marketing services company worked with its clients to create models that run in real-time to predict customers at risk of churn and recommend solutions. The insight from these models is improving customer satisfaction and leading to increased revenue.

Predixion's customers were impressed with the platform's ease of use, visualizations and the ability to collaborate.

Conclusion

Hurwitz & Associates research for the Victory Index indicates that Predixion's advanced analytics offerings are well positioned to address a variety of advanced analytics use cases. Predixion's customers were impressed with the platform's ease of use, visualizations and the ability to collaborate. In addition, Predixion's MLSM technology allows customers to create portable analytics workflows that can be placed close to the data source and support real-time analytics and IoT use cases. The company has done a good job of building upon success in the healthcare space by developing industry-specific solutions for a variety of horizontal and vertical business challenges.

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About Hurwitz & Associates

Hurwitz & Associates is a strategy consulting, market research and analyst firm that focuses on how technology solutions solve real world customer problems. Hurwitz research concentrates on disruptive technologies, such as Cognitive Computing and Big Data Analytics, Cloud Computing, Service Management, Information Management, Application Development and Deployment, and Collaborative Computing. Their experienced team merges deep technical and business expertise to deliver the actionable, strategic advice clients demand. Additional information on Hurwitz & Associates can be found at www.hurwitz.com.

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