

Confidently Anticipate and Drive Better Business Outcomes

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The Best-Run Businesses Run SAP®



See the future more clearly with predictive analytics

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Competing in today's marketplace means using all types of data. Your organization can **identify untapped opportunities and expose hidden risks** buried inside Big Data and the Internet of Things – all in real time – with the power of predictive analytics. You can quickly build sophisticated predictive models to mine your data for the insights that will keep you ahead of the pack.

The instrumentation of nearly everything is creating a rising tide of data, both structured and unstructured. Every enterprise realizes data is a priceless strategic asset and a resource for competitive advantage. But data by itself is of little use.

No matter what business you're in, your future success may depend on one thing: real-time predictive insight. Not just insight gleaned from standardized reports and data, but predictive insight buried in data from across your entire organization and beyond – data

that you can use the very moment it's created to help your business thrive.

Successful companies realize the potential of predictive analytics used across business processes, applications, and line-of-business solutions to sustain competitive advantage. Your organization can use SAP® Predictive Analytics software to get insights that drive real-time understanding of the business, and confidently anticipate what comes next to guide better, more profitable, forward-looking decision making.



Automated data preparation for faster, more accurate results

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Predictive modeling for competitive advantage

Advanced, intuitive data visualization for greater insight

Predictive scoring for real-time decision making

Predictive model management for higher productivity

Predictive social and recommendation functions

Predictive analysis library and R integration

SAP Predictive Analytics makes the entire predictive modeling process faster and easier with automation, starting with data preparation. (See the [figure](#) on the next page.)

Before you can build a predictive model, your data must be transformed into a format that analytical engines can process. Traditional data preparation involves many activities that are manual, repetitive, and prone to human error.

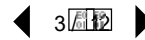
SAP Predictive Analytics automates these steps. Using self-service, business users define a broad set of reusable business components, called analytical records, which can

be applied to automatically create modeling data sets. This innovative approach produces faster and far more accurate results than traditional methods.

Your data resides in a wide variety of applications, data warehouses, legacy analytic tools, and even flat files. SAP Predictive Analytics connects to almost any data source, including spreadsheets, unstructured sources such as text files, and proprietary file formats like SAS and SPSS. The data is encoded automatically – whether a variable is nominal or ordinal, or a field has missing values or contains outliers – and you always get optimal results.

“We can deliver the right order to the right customer at the right time. It’s a real competitive advantage.”

Filip Deroover, Business Intelligence Specialist, Belgacom Group



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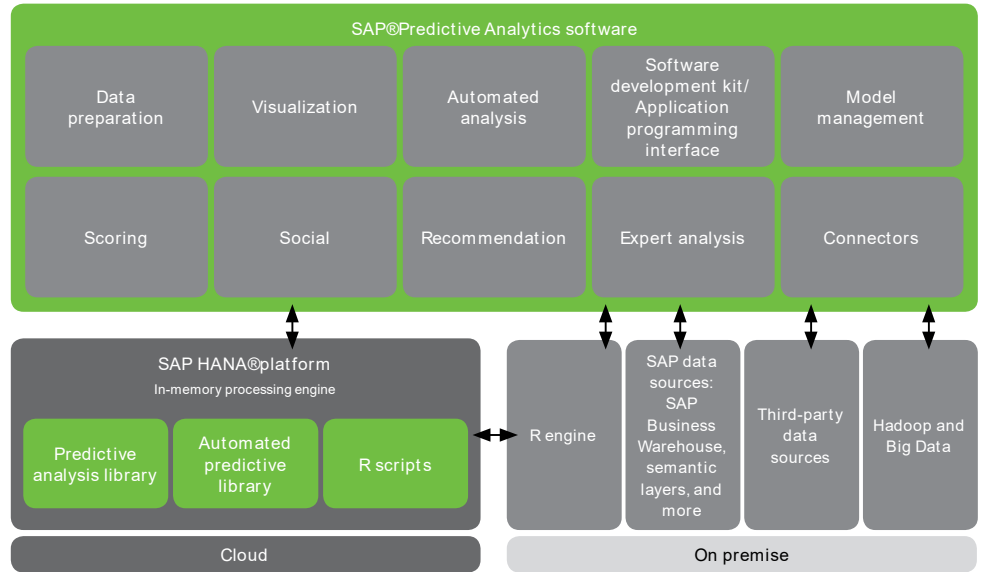


Figure: SAP Predictive Analytics – End-to-End Predictive Solution



Predictive modeling for competitive advantage

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SAP Predictive Analytics provides a predictive modeling environment suitable for users at many levels. For business analysts, guided analysis automates the building of sophisticated predictive models for every data-mining function imaginable – and in days, not weeks or months. Data scientists can build powerful predictive models using algorithms based on the R language as well as native high-performance predictive algorithms within the SAP HANA® platform. SAP Predictive Analytics has proven that a large portion of this effort can be automated while delivering

accurate and robust predictive models. Unlike traditional regression algorithms, the software can safely handle very large numbers of input attributes (over 15,000) automatically.

By building predictive models, you can gain unprecedented insight into your customers – to better understand areas such as acquisition, cross-sell, up-sell, and prevention of churn – and you can learn to take the next best action with every interaction, across every customer channel.

“SAP Predictive Analytics will give us a real competitive advantage, saving hundreds of millions of euros annually.”

Annabelle Gerard, Business Intelligence and Data Mining Analyst, Monext SAS



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SAP Predictive Analytics provides an intuitive way to explore your data through visualization. The results of applied predictive modeling can be transformed into stunning, advanced visualizations to reveal insights. Visualization forms include:

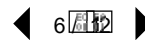
- Cluster sizes
- Density
- Distances
- Variable comparisons
- A decision-tree viewer with the ability to zoom in and expand and contract the tree

- Outcome probabilities
- A time series chart showing actual and tested data, with a time slider to zoom in on period ranges
- Parallel coordinate charts supporting numeric and categorical variables, variable selection, scatter plot matrix, and more

In addition, SAP Predictive Analytics offers an integrated collaborative environment to share, enhance, and publish predictive models and results with minimal time and effort.

“In our first year using SAP Predictive Analytics, we realized a 300% uplift in targeting accuracy.”

Pankaj Arora, Senior Analytics Consultant, Tipp24.com



Predictive scoring for real-time decision making

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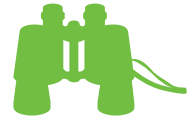
Predictive analysis library and R integration

SAP Predictive Analytics graphically displays the individual variable contribution to a predictive model, which helps you select the most important variables that affect a given business question. At the same time, it gives a clear indication of which attributes contain irrelevant information or are redundant with other attributes. Models can be directly applied in a simulation mode for a single input data set, predicting the score for an individual business question in real time.

Predictive scoring is critical for your business to get the real-time impact that you want from using analytics. With the open interface in SAP Predictive Analytics, you can generate predictive scoring for a wide variety of target systems and directly embed the results wherever they will be most useful – into databases, business processes, and line-of-business solutions such as call centers.

“SAP Predictive Analytics has given us a scalable approach to create accurate forecasts across our business.”

Elena Zhukova, Head of Analytics, Eldorado LLC



Predictive model management for higher productivity

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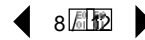
Predictive analysis library and R integration

SAP Predictive Analytics brings even more productivity to your business analysts, enabling them to ask more “what if” questions and end up with hundreds or even thousands of predictive models. Traditionally, a proliferation of models across the enterprise means that managing models, applying them, and making incremental improvements are cumbersome issues. Not so with SAP Predictive Analytics. With its browser-based, single-sign-on environment and user-friendly scheduling

interface designed for business analysts, the software helps automate model management so analysts can try a variety of scenarios, incorporate the incremental improvements in the model in real time, schedule model refresh, manage models by exception, and deploy scores instantly. When model management is easier, your business analysts get more done, and you can gain critical insight into your business.

“SAP Predictive Analytics has helped uncover dependable patterns and insight that were previously unattainable.”

Corentin Jouan, Head of Business Intelligence, Groupe SAMSE



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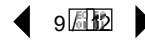
Predictive analysis library and R integration

Social and recommendation functionality in SAP Predictive Analytics provides powerful network analysis and link analysis to make the most of social influence and advanced personalization. By using business data, you can perform network analysis to learn about the links between your customers and which customers have a strong social influence. Often there are hidden links connecting communities of individuals. With network analysis, you can drill deep into your data to find these relationships, which can help you manage customer churn, risk, and fraud.

Using the software's recommendation functions, you can create a graph for every possible type of product or entity associations. Merchandisers can prioritize the types of product associations by choosing the right weighting to apply to each rule set, thereby obtaining a unique and complex score for each product association to produce the most relevant product recommendations. SAP Predictive Analytics easily integrates with content management systems and e-commerce platforms such as those from hybris, an SAP company.

“SAP Predictive Analytics allows us to offer our members new services that have boosted engagement and overall site stickiness.”

Rémi Kirche, Marketing Director, Skyrock.com



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R is a popular statistical language used to perform sophisticated statistical analysis and predictive analytics. SAP Predictive Analytics and SAP HANA offer tight integration with R to enable using a large number of algorithms and custom R scripts. Expert analysis functionality simplifies the use of open-source R-based algorithms to build predictive models with a powerful drag-and-drop interface, and it also allows users to write their own R scripts. SAP HANA allows R code to be embedded and processed in-line as part of the overall query execution plan.

The predictive analysis library of SAP HANA contains numerous native, high-performance, predictive algorithms for in-database processing that result in quicker insight and faster action. With algorithms for association analysis, regression, cluster analysis, classification analysis, time series analysis, probability distribution, outlier detection, link prediction, data preparation, statistical functions (univariate and multivariate), and more, developers can build applications and embed predictive logic into business processes.

“With [SAP HANA, R, and Hadoop], we have found a way to shorten the genome analysis time from several days down to only 20 minutes.”

Yukihisa Kato, CTO and Director, Mitsui Knowledge Industry Co. Ltd.



Achieving real-time predictive insight to drive business success

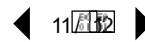
Achieving real-time predictive insight to drive business success

Organizations can no longer focus solely on delivering the best product or service. To succeed, they must uncover hidden customer, employee, vendor, and partner trends and insights; anticipate behavior and then take proactive actions; and empower the teams with intelligent next steps to exceed customer expectations. They must also create new orders that increase market share and profitability, develop and execute a customer-centric strategy, and target the right orders to the right customers through the best channels and at the most opportune time.

SAP Predictive Analytics allows your organization to achieve real-time insights that increase your understanding of customer behavior, improve your response to customers, and deliver tangible business value – ultimately driving your profitability. SAP customers are already reaping the rewards: by reducing the time to transform information into insights and improving the quality of decisions based on those insights to drive higher profitability and growth. Why not join them?

“Modeling made easy – thanks to SAP Predictive Analytics.”

Dr. Margaret Robins, Statistical Analyst,
Data Analytics and Insight, Aviva plc





Objectives	Solution	Benefits	Quick Facts
<p>Summary SAP® Predictive Analytics software brings predictive insight to business users, analysts, data scientists, and others in your company. Unlock the potential of Big Data from virtually any source with the power of predictive modeling. By automating the building and management of sophisticated models to deliver insight in real time, this software makes it easier to make better, more profitable decisions across the enterprise.</p> <p>Objectives</p> <ul style="list-style-type: none"> • Bring the power of predictive analytics to a broad spectrum of users • Incorporate predictive analytics into line-of-business applications and business processes • Harness Big Data and the Internet of Things to predict and act in real time 	<p>Solution</p> <ul style="list-style-type: none"> • Automated preparation of data • Predictive modeling for users at all levels • Advanced data visualization • Predictive scoring, model management, and social and recommendation functionality • Access to high-performance algorithms • 360-degree connectivity to Big Data and third-party data sources <p>Benefits</p> <ul style="list-style-type: none"> • Gain faster, more accurate predictive results with automated tools • Improve decision making by embedding predictive results into business processes • Uncover hidden insight with sophisticated modeling, unleashing the power of Big Data and the Internet of Things <p>Learn more To find out more, call your SAP representative today or visit us online at www.sap.com/predictive.</p>		



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