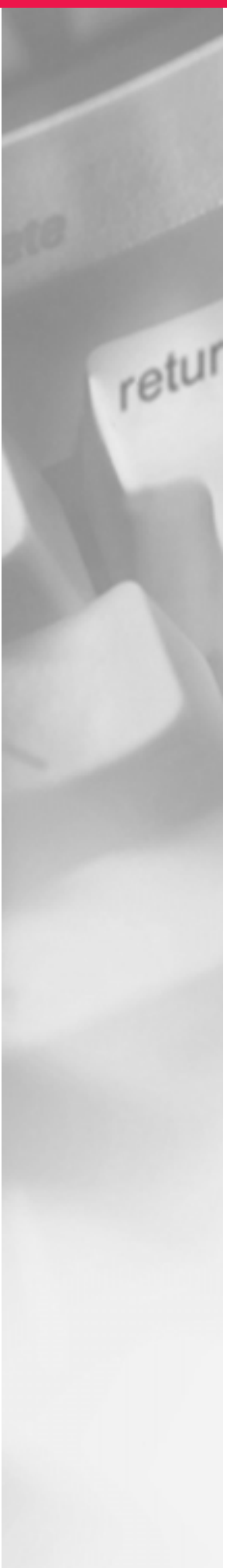
Better decision making with long-term forecasting:

DecisionTime® and WhatIf?™

SPSS BI®



Executive Summary

You have forecasts of how your organization will perform next week. But what about for next year? Or for the next five years? Are your forecasts accurate? Are you afraid you may be basing crucial decisions that will affect your entire organization's long-term outlook on inaccurate forecasting models?

Accurate long-term forecasting is generally thought of as a time consuming and tedious process – but essential for almost any company in today's fast moving marketplace. Decision makers in your organization need to be able to set long-term goals – and know how to reach them – based on your company's past performance and tacit knowledge of your industry. If those forecasting models are inaccurate, your company will experience:

- Lost revenue-generating opportunities
- Wasted resources
- Missed sales objectives
- Poor service levels, and
- Customer turnover

SPSS' DecisionTime & WhatIf? forecasting solution provides you with a clear picture of your organization's future by helping you quickly and easily create accurate long-term forecasts based on your organization's historical data and your business knowledge. SPSS' WhatIf? product then lets you share these forecasting results with other decision makers over the Web or your company's intranet. Your organization's decision makers can then create various potential scenarios to fine-tune your forecasting further. The result: Your decision makers can make informed decisions based on accurate forecasting to drive your organization's future.

This paper describes the importance of long-term forecasting to your organization, and how you can use DecisionTime and WhatIf? to achieve your objectives.

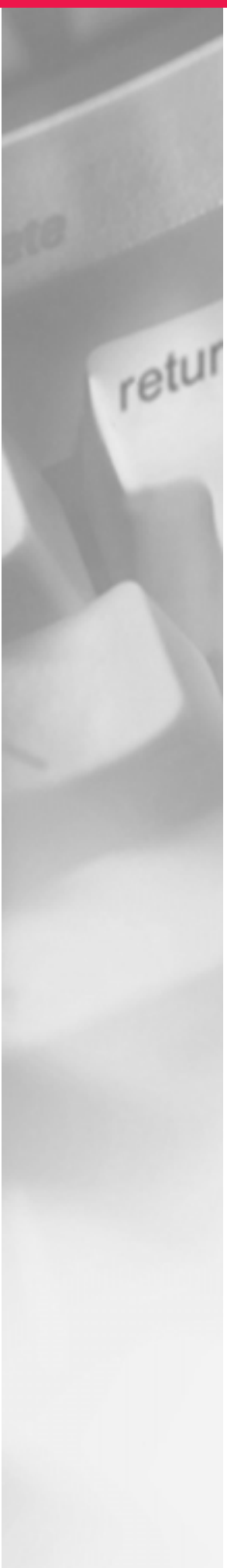
What is long-term forecasting?

The purpose of long-term forecasting is to be able to predict, with a high degree of certainty, how your organization will perform based on its past performance and your business knowledge. For instance, a Vice President of Sales should be able to take the company's past sales history and future expenditures and extrapolate this information to make highly accurate revenue forecasts for the next quarter, year, or five years.

Long-term forecasting can also help you find answers to these important questions:

- If I increase my advertising budget, how will it affect sales by product or region?
- How will increasing assembly line capacity affect production?
- Will a change in fees affect the number of new customers we obtain?
- How will increasing the number of law enforcement personnel affect crime rates?
- How will a change in the number of influenza shots affect the number of patients admitted into a hospital?
- How will an increase in tuition costs affect student enrollment?

Using long-term forecasts, decision makers such as yourself can then set the general course of your organization to achieve the goals of these forecasts.



Who benefits from long-term forecasting?

Industries

Almost every industry can take advantage of long-term forecasting and apply it to predict staffing (loss or growth), market growth, and market share. Other applications for long-term forecasting include:

- *Retail and E-Commerce*
  Sales, revenue, expenses, inventory levels and demand for product lines, customer segments, and geographic regions.
- *Telecommunications and Utilities Companies*
  Customer acquisition, customer loyalty (by tracking ZIP code or name), revenue, usage, call volumes, and wattage by price plan, product line, and geographic region.

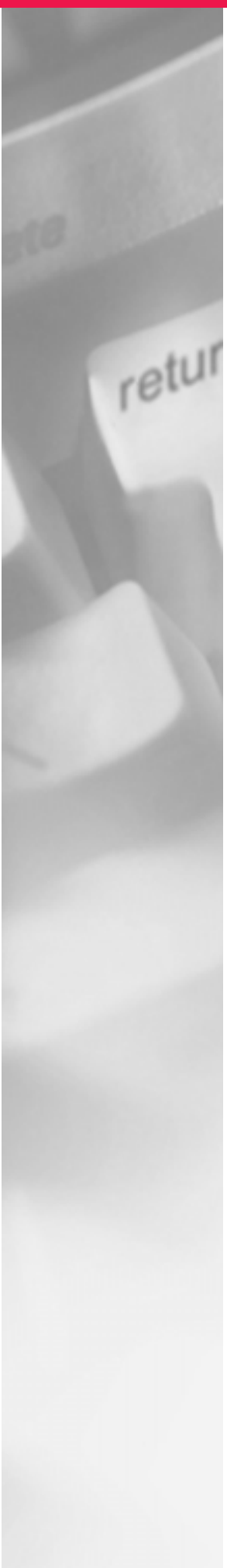
Almost every industry can take advantage of long-term forecasting.

- *Financial Industry*
  Account balances, number of new customers, and churn by product line.
- *Healthcare Providers*
  Number of patients, rate of infection and average length of stay.
- *Transportation, Hospitality, and Entertainment*
  Customer satisfaction (though surveys), number of viewers, subscribers, filled seats, filled beds, revenue, expenses, and demand.
- *Higher Education Institutions*
  Revenues, endowments, enrollment, private and federal grants, and alumni and community donations.
- *Federal, State, and Local Governments*
  Revenues through sales and property taxes and other fees (auto, vendor, restaurant, and liquor licenses, auto violations, etc.), expenses, and economic trends.

Organization's departments

Accurate long-term forecasting can benefit all departments within an organization, including:

- *Finance and Accounting*
  Establish budgets for the upcoming time period; Plan for salary increases and bonuses for employees.
- *Human Resources*
  Plan for reductions (or increases) in staff if the forecast is lower (or higher) than previous year.
- *Manufacturing*
  Allocate capital, manage inventory, and develop production schedules.
- *Marketing*
  Plan for promotions, advertisements, and other events.
- *Sales*
  Forecast number of units to be sold and revenue generated by sales team; Identify and target new customers.



Building accurate forecasts

Inaccurate forecasts can lead to lost business opportunities and misallocated resources. For instance, if you forecast too high, you may miss sales objectives. If you forecast too low, you may have too few products in stock. For example, in the retail industry, if you order too few products that are popular with consumers, you may experience higher customer churn as your customers seek to have their needs met by competitors.

Integrity of your data

Starting out with imprecise or even erroneous data inevitably leads to poor forecasting and lost revenues down the line. To build an accurate long-term forecast, you should start with accurate historical data. You can then use this data and tacit knowledge of your industry to measure the future performance of your organization.

To further fine-tune your forecasts, DecisionTime and WhatIf? enable you to identify past and predictable occurrences that can affect your data. These occurrences are called "interventions" and "events:"

An "intervention" is a one-time (or rare) occurrence, i.e., an employee strike or a natural disaster.

An "event" has occurred regularly in the past and will occur again in the future, i.e., a special promotion or sponsoring a sporting event.

Predictor variables that may influence your long-term forecasting

Take into account outside variables to generate a better long-term forecast.

Although you may have sound historical data on which to base your long-term forecasts, you should take into account outside variables that have a significant effect on your key performance indicators. Taking outside variables into account generates a better long-term forecast.

Below are some of the most common factors you would want to evaluate.

The economy

National economic conditions (i.e., GDP, housing starts) can affect your business if it is closely tied to the economy. For example, the timber industry is closely tied to housing starts. If the forecast for housing starts is to increase over the next year, the market growth for lumber will likely also increase.

International conditions, such as exchange rates and foreign GDP, can affect your business if it is closely tied to the global economy, i.e., oil, steel, imports/exports.

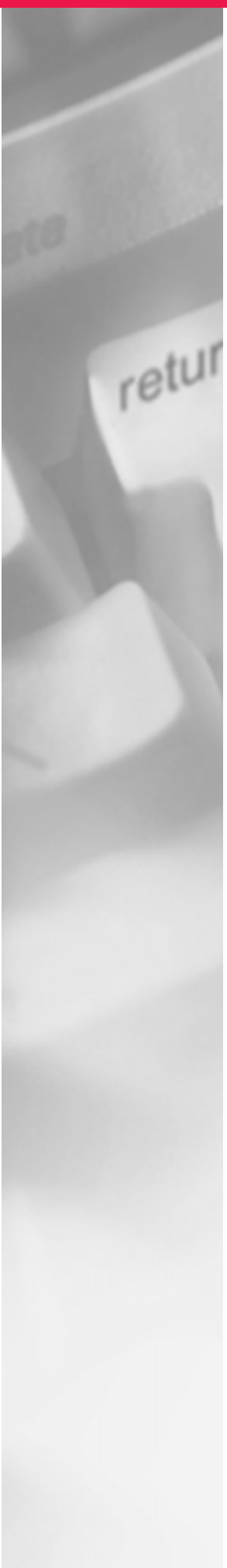
Interest rates can affect your business if your products are expensive and/or non-disposable, i.e., cars, mortgages.

Product introductions

Existing line extension means selling existing products in a new manner (i.e., bundling with other products).

New product roll-out includes introducing a product line by creating a new product categories, developing new products within existing categories, or building add-on's to an existing product line.

Product changes can include incremental changes to existing products (i.e., new technologies or innovations that improve your product). Product changes may result in cannibalizing existing sales due to new, improved versions of your existing product line.



Competitors
Share change can increase or decrease based on the number of competitors in your industry, or based on what differentiates you from a competitor.

New product introductions or technological innovations introduced by competitors can take sales away from your business.

Price changes
Price increases or decreases in your product line can affect your long-term forecasting.

Generate accurate forecasts with DecisionTime & WhatIf?

Long-term forecasting with DecisionTime and WhatIf? enables you to make profitable business decisions for your company's future.

SPSS' DecisionTime and WhatIf? forecasting solutions provide you with accurate long-term forecasting which gives you a clear picture of your organization's future so you can make profitable business decisions.

DecisionTime uses an interactive wizard that enables your team of forecasters to quickly load historical data from your company's databases or spreadsheets. DecisionTime then analyzes the patterns in your historical data, and automatically forecasts future values.

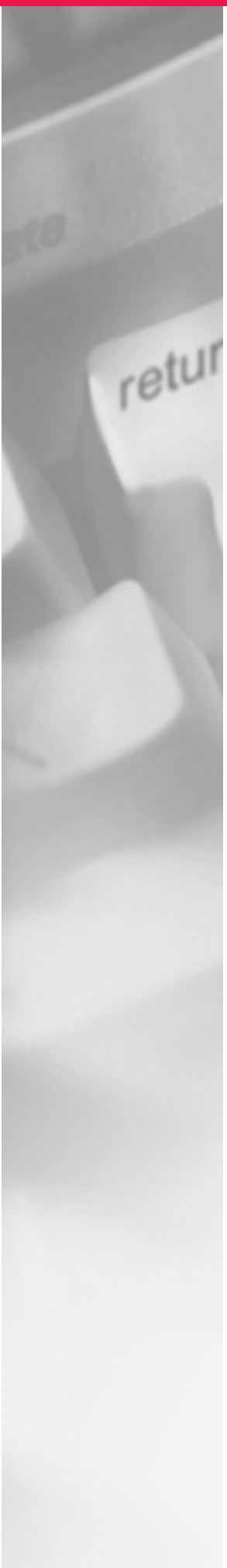
With DecisionTime, your analyst can quickly and easily build a forecast based on your company's accurate, historical data. Once your analyst has generated a long-term forecast, the forecast can be shared among decision makers within your organization by using WhatIf?. WhatIf? then lets those involved in the decision-making process explore potential scenarios to improve your forecasting further, and to make the most informed decisions for your organization's future.

Make forecasting an easier process
With DecisionTime, you do not need to hire outside statisticians who may not understand your business or your business data. DecisionTime's interactive wizard does the bulk of the work to build your forecasts, including:

- Maintaining integrity of your data
- Enabling your forecasters to work with time periods that make sense to your business
- Incorporating predictor values of your business to create the best possible forecast

Build a complete picture of the future
DecisionTime provides easy-to-understand measures that test the fitness of your forecasting model, so you are confident of on-target results. To build the most complete picture of the future, DecisionTime automatically selects the best forecasting technique for your historical data. When generating a forecast, DecisionTime takes into account:

- Seasonality and trending
- Predictor variables, such as advertising or sales staffing
- Exceptions and one-time interventions, such as sales promotions or price increases
- Missing data



Leverage server architecture to access large databases
DecisionTime's distributed architecture enables your team of forecasters to build forecasts based on large databases of data. By performing calculations on powerful, number-crunching servers, you are not limited to the hardware limitations of desktop workstations.

Share forecasting results
WhatIf? lets you share forecasts with everyone in the decision-making process.

Once a forecast is created in DecisionTime, you can deploy the results to your intranet or Web site using WhatIf? Web Server. By sharing forecasts throughout your organization, everyone in the decision-making process — including you, other employees, partners, and suppliers — can see how their decisions can affect your organization's long-term results. For example, if your organization forecasts revenues by region, each of these regional forecasts can be deployed to the regional manager or decision-maker for changes and approval. Each manager can make changes based on what they know about the factors affecting their local market and then produce new forecasts. This is helpful since each regional manager will have unique knowledge that is next-to-impossible to account for at the higher corporate level.

Eliminate re-forecasting
WhatIf? enables you and all your decision makers to create "what if" scenarios without having to have an analyst regenerate new forecasts. By testing different scenarios, you can see how changes affect your forecasts, and then determine the best way to reach your objectives.

Conclusion

For your organization to succeed, you need a clear picture, not just of its past, but of its future. Using accurate, historical data to build long-term forecasting models can provide you, and other decision makers in your organization, with the information you need to make sound, profitable decisions that will positively affect your organization's future.

SPSS' DecisionTime solution can help your forecasters quickly build accurate long-term forecasting models based on your company's historical data. WhatIf? then allows your forecasters to easily share these forecasting models with decision-makers, such as yourself, to make crucial business decisions, and see how these decisions may impact your organization's future down the line.

Data mining makes the difference

SPSS BI helps people solve business problems using statistics and data mining. This predictive technology enables our customers in the commercial and public sectors to make better decisions and improve results. SPSS BI software and services are used successfully in a wide range of applications, including customer attraction and retention, cross-selling, survey research, fraud detection, Web site performance, forecasting and scientific research. SPSS BI's market-leading products include SPSS,® Clementine,® AnswerTree,® DecisionTime® and SigmaPlot.® For more information, visit our Web site at **www.spss.com.**