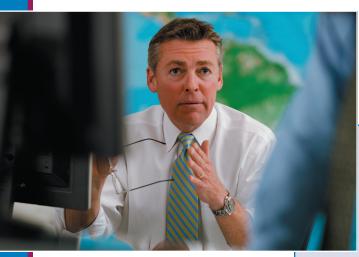# Forecasting Seminar

Business Forecasting: Techniques, Applications and Best Practices

November 13-15, 2013 ★ Boston, Massachusetts USA

This comprehensive three-day course covers all aspects of business forecasting. Numerous real-world examples drawn from a wide range of industries are used throughout to illustrate key concepts. The seminar includes computer workshops, allowing you to immediately apply what you've learned to your own data.

By the end of the seminar you will not only have gained considerable insight into business forecasting, but will also have had the opportunity to solve your own forecasting problems with state-of-the-art software and expert instructors.

"The seminar exposed me to various forecasting models, enabling me to determine what best fits our business."

**Val Pulgar
Forecast Analyst, OPI Products, Inc.**

Agenda

✓ **Introduction:** Properties of Data ★ Overview of Methods ★ Resources for Forecasters

✓ **Components of Data:** Trends ★ Seasonality ★ Business Cycles ★ Trading-Day Variation ★ Interventions ★ Noise

✓ **Exponential Smoothing Models:** Holt-Winters Family of Models ★ Damped Trend Models ★ Croston's Intermittent Demand Model ★ Event Models (for promotions and other irregular events)

✓ **Forecast Accuracy and Evaluation:** Within-Sample vs. Out-of-Sample Errors ★ Error Measurement Statistics ★ Simulations vs. Real-Time Tracking

✓ **Box-Jenkins Models:** Advantages and Disadvantages ★ Automatic Identification Procedure ★ Differencing ★ Diagnostics

✓ **Forecasting a Product Hierarchy:** Data Characteristics ★ A-B-C Classifications ★ Constructing the Hierarchy ★ Top Down vs. Bottom Up ★ Proportional Allocation

✓ **New Product Forecasting:** New Product Classifications ★ Item Supersession ★ Forecasting by Analogy ★ Bass Diffusion Model

✓ **Dynamic Regression:** When to Use ★ Standard OLS ★ Lagged Variables ★ Cochrane-Orcutt Models ★ Hypothesis Tests

✓ **Computer Workshops:** Structured Forecasting Exercises ★ Analysis of Attendee's Data

ForecastPRO

Software Discount: Attendees are eligible to receive a discount of up to $1000 when licensing Forecast Pro software.

Who should attend

Production planners, supply chain analysts, product managers, marketing managers, business managers, corporate planners, market researchers, utility forecasters or those who prepare or analyze forecasts as part of their job responsibilities. Some prior knowledge of statistics is helpful but not essential.

www.forecastpro.com

Business Forecasting: Techniques, Applications and Best Practices

November 13-15, 2013 ★ Boston, Massachusetts USA

Seminar Hours

Wednesday, November 13, 2013: 9 am to 5 pm
Thursday, November 14, 2013: 9 am to 5 pm
Friday, November 15, 2013: 9 am to 3:30 pm
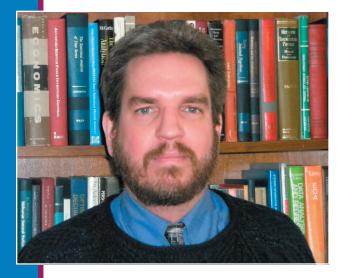Lunch is provided daily.

Venue

Boston Marriott Copley Place
110 Huntington Avenue
Boston, MA 02116
(617) 236-5800
http://www.marriott.com

The hotel is centrally located in the Back Bay district of the city and is just 3 miles from Boston's Logan Airport.

Hotel rooms are available at a **reduced rate of $279/night if booked by Wednesday, October 23**. To receive this special rate, call Marriott Reservations at (800) 228-9290 or (617) 236-5800 and indicate that you are attending the Business Forecast Systems meeting.

About the Instructor

Eric Stellwagen is the co-founder of Business Forecast Systems, Inc. and the co-author of the Forecast Pro software product line. With more than 27 years of expertise in the field, he regularly presents workshops on business forecasting and is widely recognized as a leading educator on the subject. Drawing upon his extensive consulting experience helping organizations to address their forecasting challenges, Eric infuses his classes with practical approaches and uses real-world data to illustrate concepts. He has worked with many leading firms including Coca-Cola, Kraft, Merck, Nabisco, Owens-Corning and Verizon and has presented workshops for a variety of organizations including APICS, the International Institute of Forecasters (IIF), the Institute for Operations Research and the Management Sciences (INFORMS), and the University of Tennessee. Eric is currently serving on the board of directors of the IIF and the practitioner advisory board of *Foresight: The International Journal of Applied Forecasting*.

www.forecastpro.com

REGISTRATION FORM
"Business Forecasting: Techniques, Applications and Best Practices"
November 13-15, 2013 ✳ Boston, Massachusetts USA

Name: _____   Title: _____

Company: _____

Address: _____

_____   Country: _____

Phone: _____   Fax: _____

E-mail: _____

REGISTER WITH YOUR COLLEAGUES AND SAVE!

Registration Fees:

❑ One Attendee..$1,395

or

❑ One Attendee with Team Discount...$1,095

Sign up 3 or more attendees at the same time and pay only $1,095 per attendee. Team Discount cannot be combined with any other discount. Names of the other attendees must be listed below to receive this price:

#1 _____   #2 _____   **TOTAL** _____

Payment Method: (payment in full is required at the time of registration)

❑ Check attached
❑ Visa   ❑ MasterCard   ❑ American Express

Card # _____   Expiration date:_____   Security Code:_____

Signature:_____

Cancellation Policy:

The seminar is limited in size and we ask that if you must cancel to please inform us as soon as possible. Attendees may receive a full refund if cancellation is made 30 days or more prior to the start of the seminar. Attendees who cancel 14-30 days prior to the start date may receive a refund of the registration fee paid minus a $150 service charge. Registrants who fail to attend or cancel less than 14 days before the start date are not entitled to receive a refund. Personnel substitutions may be made at any time.

Mail to:
Business Forecast Systems
68 Leonard Street
Belmont, MA 02478 USA

Fax Form to:
617-484-9219
or Call:
617-484-5050

E-mail:
info@forecastpro.com

Web:
www.forecastpro.com

(Please fill out one form per attendee, copy if necessary)

Business Forecasting: *Techniques, Applications and Best Practices*

Seminar Agenda

The three-day seminar **Business Forecasting:** *Techniques, Applications and Best Practices* is designed to provide insight into all aspects of business forecasting. The course topics are presented using a combination of lectures, real-world examples drawn from a wide array of industries and hands-on sessions. While the seminar covers some of the underlying theory behind the forecasting models, it is by no means the main emphasis of the course.

The following agenda provides a general overview of the seminar's content. The actual schedule varies from seminar to seminar based on the dynamics of the specific group. Thus all times and topics are approximate and subject to change.

Agenda - Day One *(9:00 AM - 5:00 PM)*

Introduction to Forecasting
A broad overview of business forecasting and its various uses within the organization. Topics include approaches to forecasting, features of data, the role of judgment, selection of appropriate forecasting methods for varied data sets and resources for forecasters.

Morning Break

Components of Data
An in-depth look at the different components found in time series data including trends, seasonal patterns, business cycles, trading-day variation, interventions (events) and noise. Discussion addresses the forms the components can take, spotting local vs. global components, interpretation of business cycle indicators and the use of decomposition routines.

Lunch

Exponential Smoothing
A survey of exponential smoothing techniques with particular emphasis on the Holt-Winters family of models and Croston's intermittent demand model. Topics include the pros and cons of using these models, when they are best used, how they work, identifying model components, parameter optimization and model diagnosis.

Forecasting Accuracy and Evaluation
A detailed look at evaluating the accuracy of forecasting methods. Topics include the distinction between within-sample and out-of-sample errors, a survey of error measurement statistics, a summary of findings from forecasting competitions and an explanation of how to use both real-time tracking reports and simulations as predictors of model performance.

Afternoon Break

PC Workshop
This first hands-on session will familiarize attendees with the use of the Forecast Pro software package and reinforce the first day's topics. Students will be guided through sample exercises applying the ideas discussed during the lectures.

Business Forecasting: *Techniques, Applications and Best Practices*

Agenda - Day Two *(9:00 AM - 5:00 PM)*

Box-Jenkins (ARIMA) Models
An exploration into the use of ARIMA models for business forecasting. Topics include the advantages/disadvantages of using these models, how and when they should be applied, automatic identification procedures, differencing and model diagnostics.

Morning Break

Event-Index Models
Event-index models extend the functionality of exponential smoothing models by providing adjustments for promotions, strikes and other non-calendar based events. This unit addresses how these models work, how and when they should be used, and how to customize their design to best suit your needs.

Lunch

Large-Scale Forecasting
Approaches for focusing on critical items when forecasting large volumes of data. Topics include evaluating and forecasting SKU data, filtering and ABC (Pareto) classification, outlier detection & correction, exception reporting and measuring accuracy across multiple time series.

Afternoon Break

Multiple-Level Forecasting
This section explores hierarchical forecasting techniques. Topics include discussion of the need for forecasting at various levels, product vs. geographical hierarchies, reconciliation strategies, top-down vs. bottom-up approaches, the use of proportional allocation and adjustment for seasonality.

PC Workshop
In this session, attendees will be guided through forecasting exercises which reinforce the day's topics. In addition to working on structured exercises, students will have time to work with their own data with the help of the course instructors.

Agenda - Day Three *(9:00 AM – 3:30 PM)*

New Product Forecasting
This session explores various approaches for forecasting new products. Topics include the pros and cons of different methods based on a product's classification, and a review of popular methods including item supersession, forecasting by analogy and the Bass diffusion model.

Morning Break

Dynamic Regression
A detailed look into the ins and outs of regression forecasting. Topics include when regression models are best applied, how to build the model, Ordinary Least Squares, leading indicators, lagged variables, Cochrane-Orcutt models, hypothesis testing and the use of "dummy" variables.

Lunch

PC Workshop
This final session consists of a regression example after which attendees will have time to work with their own data. This hands-on session is generally longer than those on the prior two days and is an ideal time to begin applying some of what you have learned to your own data.