Statistical Forecasting Applications including EMP

Application	Marketing Mix Modeling	Sales Resource Optimization	Traditional Business Forecast Explanatory	EMP Business Forecast Explanatory
Planning Issue	Size and allocate all or a portion of planned marketing budget	Size and allocate all or a portion of planned sales force budget	Develop a product (s) forecast	1) Optimize the forecast for maximum profit by maximizing ROI of total sales and marketing spend 2) Optimize the supply chain to guarantee it can make and fulfill the new forecast
Base case forecast	Given; exogenous to process	Given; exogenous to process	Developed from multiple time series	Given; exogenous to process
Independent variable	Marketing mix	Marketing mix	Marketing mix	Marketing mix
Independent variable	Continuous	Continuous	Fixed	Continuous
How forecast optimized	Prescriptively	Prescriptively	Descriptively (i.e., scenario analysis)	prescriptively
Objective function	Profit proxy: contribution margin by product	Profit proxy: contribution margin by product	Profit proxy: contribution margin by product	profit
Best possible forecast, financially	No	No	No	Yes
Best possible forecast, operationally (e.g., observe constraints)	No	No	No	Yes
Forecast's use	Within marketing	Within sales	Across Enterprise	Across enterprise
Reference Articles	Hanssens, Parsons, Schultz, Ibid, "Integrating Market response Models in Sales Forecasting at Polaroid," pages 391-393	Sinha and Zoltners, "Sales-Force Models: insights from 25 Years of Implementation, *Interfaces31:3, Part 2 of 2,* May-June 2001	D.M.Hanssens, "Order Forecasts, Retail Sales and the Marketing Mix for Consumer Durables", *Journal of Forecasting*, June-July 1998.	Article in draft